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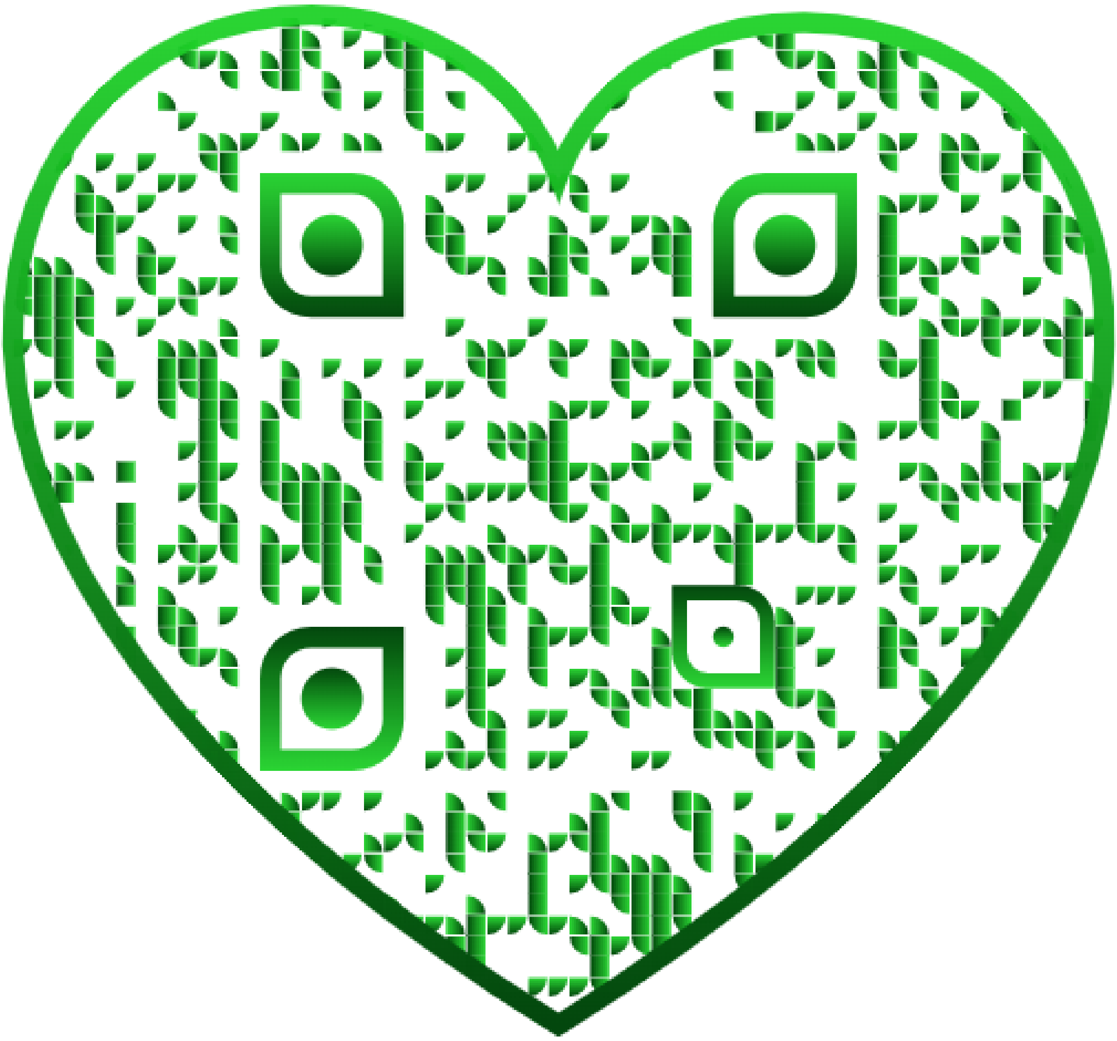

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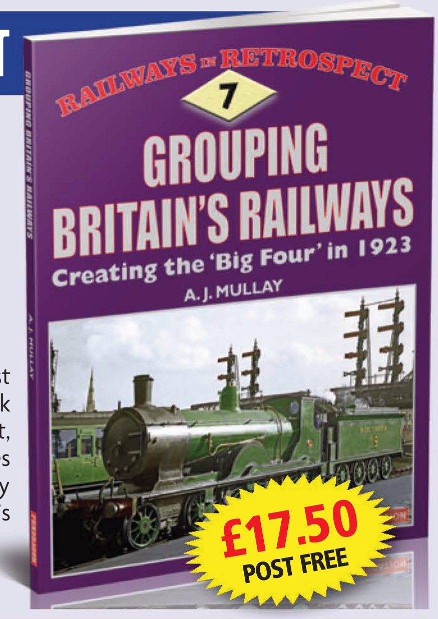

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Editorial

BackTrack
RECORDING THE HISTORY OF BRITAIN'S RAILWAYS
Vol. 39 · No. 7
No. 411
JULY 2025

Sparks effects

This month's front cover looks the way it does for two different reasons: firstly, it acknowledges the achievement of my football team in achieving promotion and winning a minor league championship into the bargain, so our club colours are to the fore; secondly, it draws attention to the fact that the motive power transformation effected by the electrification at 25kV overhead of the West Coast Main Line in the 1960s is the subject of an article coming up within these pages.

My first acquaintances with the world of electric trains were of quite a different sort from the 25kV brave new world unleashed on the West Coast route, being of the sedater, but no less revolutionary in its day, third rail system of the Lancashire & Yorkshire Railway on its line beteween Bury and Manchester. It is just about possible, I suppose, that I experienced being carried in my romper suit aboard the last of its pioneeering all-steel 1916 electric cars but I've no memory of them and it is more probable that they had left the scene before my first train journey. What I *do* clearly remember are the then new electric trains (later Class 504) introduced on the Bury line in 1959 – complete with first class and ladies only compartments!

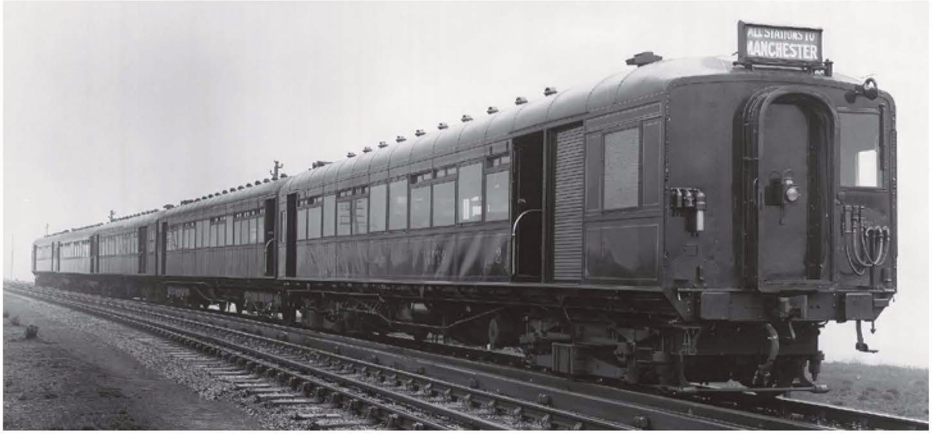
The next electric trains I boarded were those on the new Manchester–Crewe line services introduced in 1960 (the AM4 and later Class 304) and I disparagingly noted that they were really just like our Bury ones, only receiving their electricity by different means – but so what?!

The 'big thing' came when I walked down the platforms at Manchester Piccadilly to find those shiny new blue electric locomotives humming quietly at the front of their Birmingham and London expresses and exuding power just waiting to be switched on. Later in the 1960s the family travelled to the capital by the 'new electric' and while the motive power did not generate the sheer excitement of the 'Jubilee' which had taken us up to town by the Midland route on the occasion of my first visit a few years earlier, it was impossible not to be impressed by these modern machines and the way they so efficiently went about their business.

As a once-upon-a-time well-known but now best forgotten TV personality used to proclaim, "This is the age of the train." But was it? Yes, in pieces it was, but electrification of our railway sustem has only been undertaken piecemeal – a route here and an area there, never as part of a general policy or plan. Having electrified from London to Manchester and Liverpool by 1967, it was another seven years before it was extended over the rest of the West Coast route to Glasgow. Another eighteen years passed before electrification of the East Coast Main Line was completed and only now is the absurd gap between Leeds and York being dealt with – a cost-cutting gesture of the time and of the sort which always seems to find favour with the Department of Administration, but which must have caused such operational inconvenience for decades.

Occasionally (but only occasionally) someone has commented that Southern electric trains don't always appear to receive the coverage that perhaps should be due to them in *BT* given their significance in the region they serve. That, if it be a criticism, is one I would accept. In practice, life has meant that I've had very little to do with them; perhaps in consequence I've not found them to be of very great interest to me and thus know very little about them; nor admittedly have I been inspired to find out more! That said, though, I can honestly assert I've not been indundated with contributions on SR electrics in either pictures or writings. But maybe that's because it's thought I'm not particularly interested in them! And maybe that would be true...! So readers, if these trains really are subjects you want to see more of, over to you, try me out – but you might have to work hard at it!

Michael Blakemore



Fifty years before the West Coast Main Line electric revolution, the Lancashire & Yorkshire Railway's third rail electric trains were introduced on the Manchester–Bury line. Entering service in 1916, their all-metal construction was revolutionary and their side-contact pick-up arrangement was unique. (Pendragon Collection)

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BR AL4 electric No.E3037 on a test run over the Manchester–Crewe line passing the Jodrell Bank radio telescope south of Chelford c1960. (Colour-Rail.com 209445)

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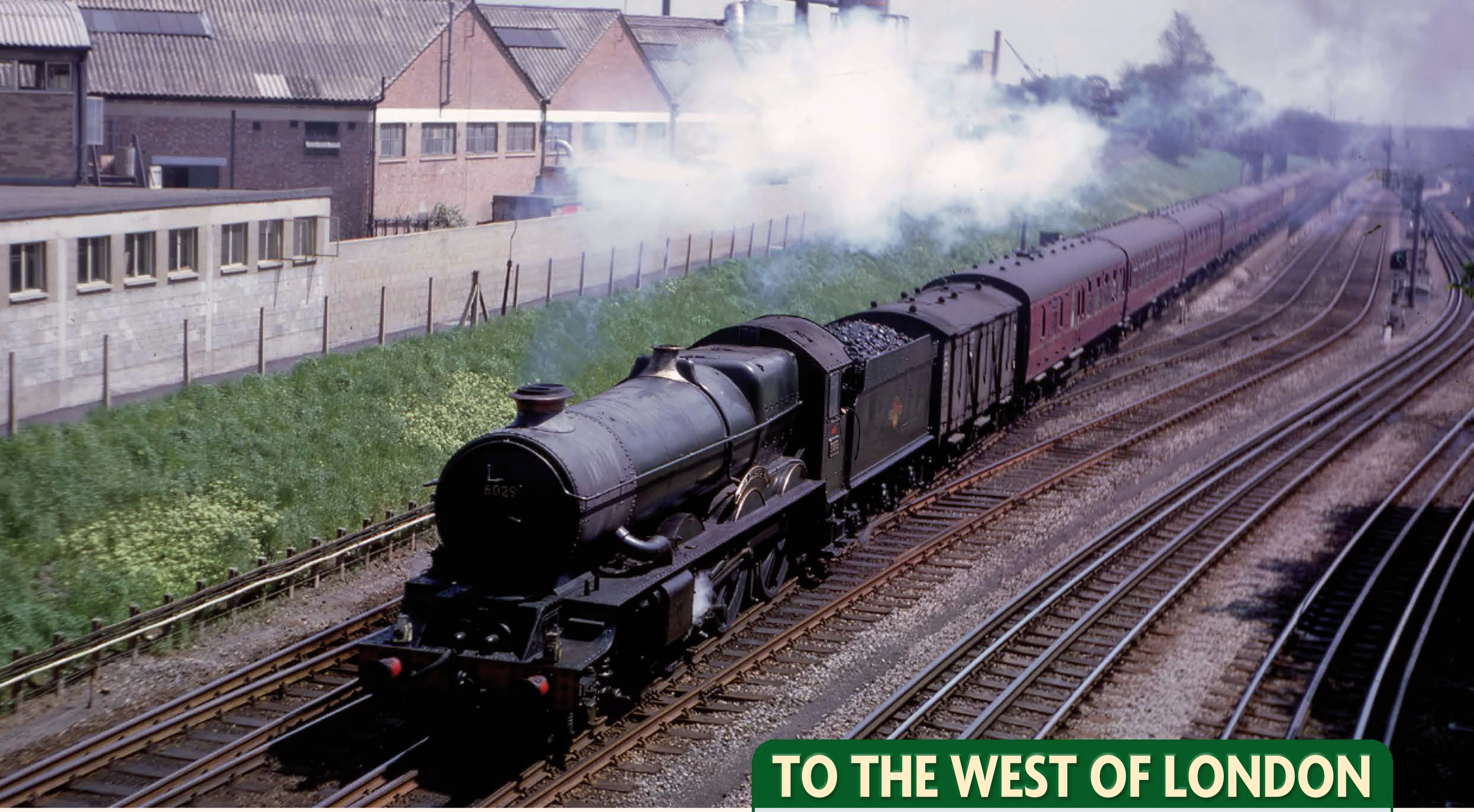
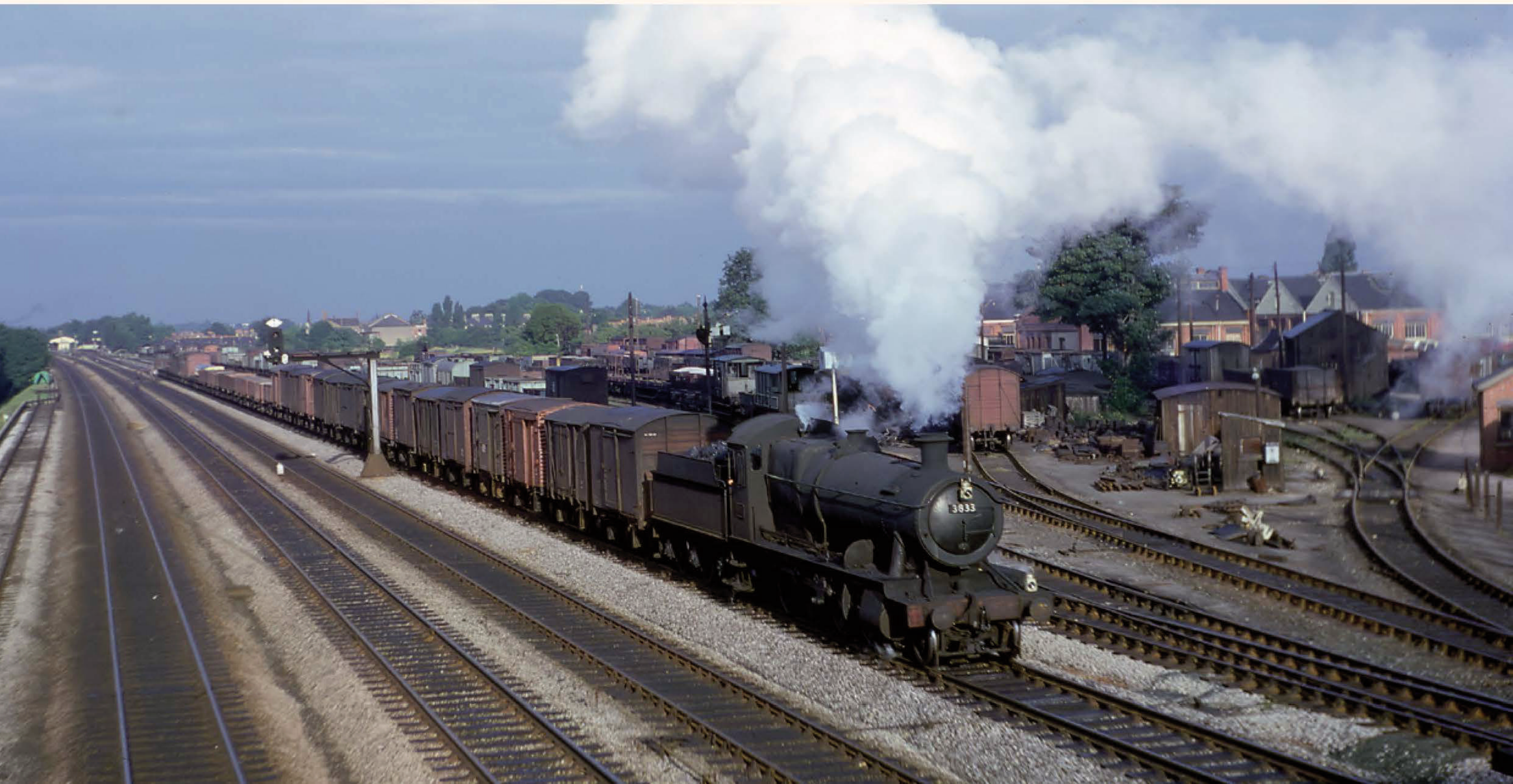


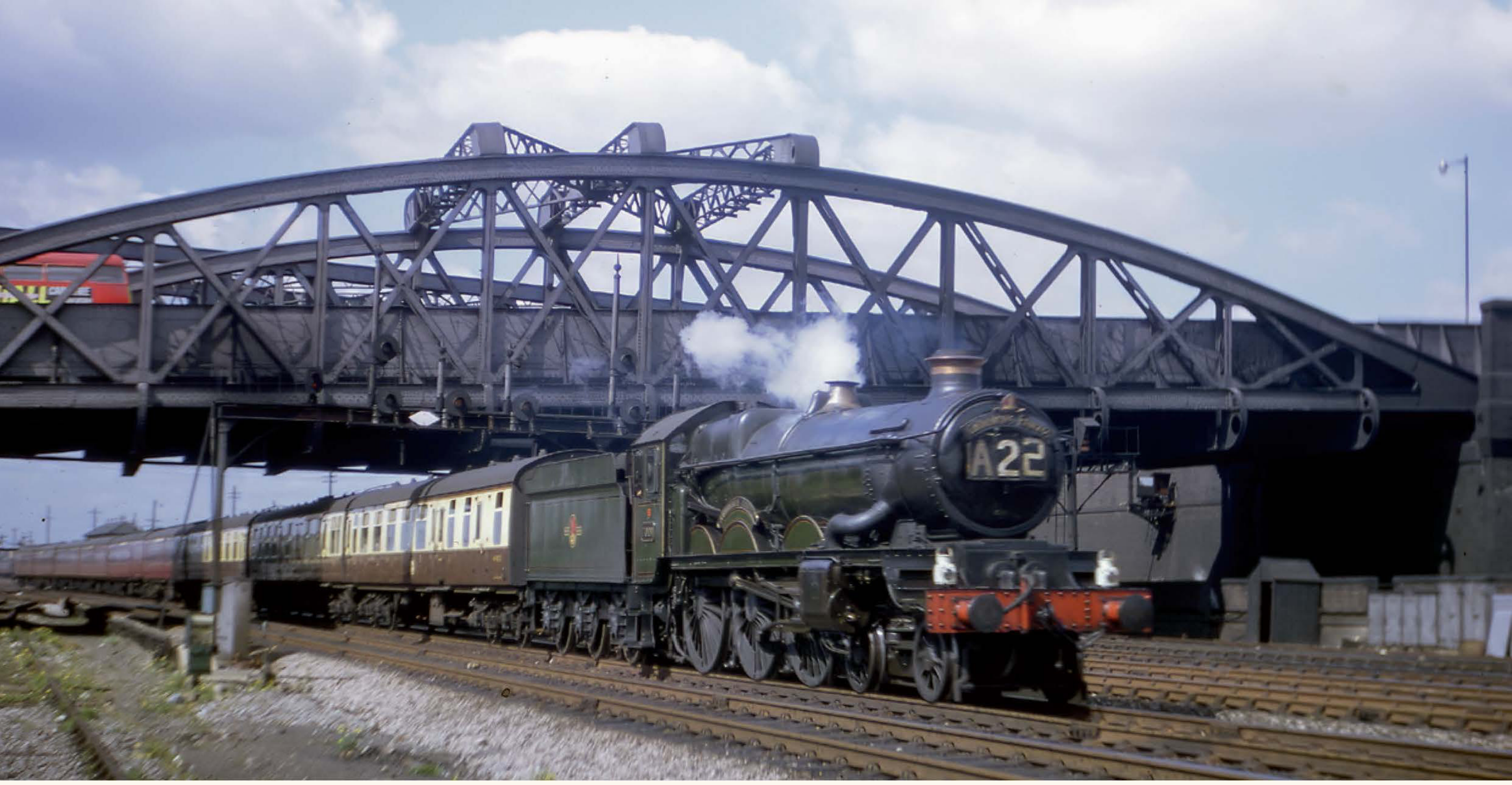
TO THE WEST OF LONDON

Steam on the Great Western main line from Paddington through the West London suburbs – as far as West Drayton – photographed by **MARTIN SMITH**

ABOVE: **'Kings' in more ways than one. The GWR was anxious to regain the status of owning the most powerful locomotives in Great Britain, that honour resting with the Southern which had just introduced its 'Lord Nelson' Class 4-6-0s. The original design of the 'King' Class was modified in order to obtain the necessary power increase and they were constructed up to the maximum weight permitted on the main line but the class's route availability was considerably restricted. However, they enabled the GWR to win back the coveted accolade of owning the most powerful engines. Apart from No.6018 which worked a railtour in April 1963, all the 'Kings' were deposed in 1962 following the mass introduction of 'Western' diesel-hydraulic locomotives and no fewer than thirteen examples were condemned in September 1962 when those machines took over haulage of the Birmingham Snow Hill/Birkenhead services and all the 'Kings' had gone by the end of the year. A smartly turned-out No.6029 *King Edward VIII* was photographed passing North Acton with the 12.10pm Paddington to Birkenhead on 24th May 1962 – it was withdrawn two months later.**

BELOW: **The other end of the scale... During the summer months, when the sun is high in the sky and deep shadows are created, by far the best times for railway photography are the early morning and evening when the light is not so harsh. This portrait of '28XX' Class 2-8-0 No.3833 heading a London-bound goods train was taken at West Ealing at 7.35am on 16th August 1962, the white exhaust steam showing up well in the cool early morning air. The '28XX' Class was originally introduced by Churchward in 1903 and was the first 2-8-0 goods engine design to be built in Great Britain. This hugely successful class was considered remarkably advanced for its time and was used on the GWR's heaviest goods workings. No.3833 was one of a later series, sometimes referred to as the '2884' Class, built during the Collett era, those locomotives having side window cabs, and it entered traffic in January 1941 and was withdrawn in July 1963. In contrast some of the earlier machines gave more that 50 years' service.**

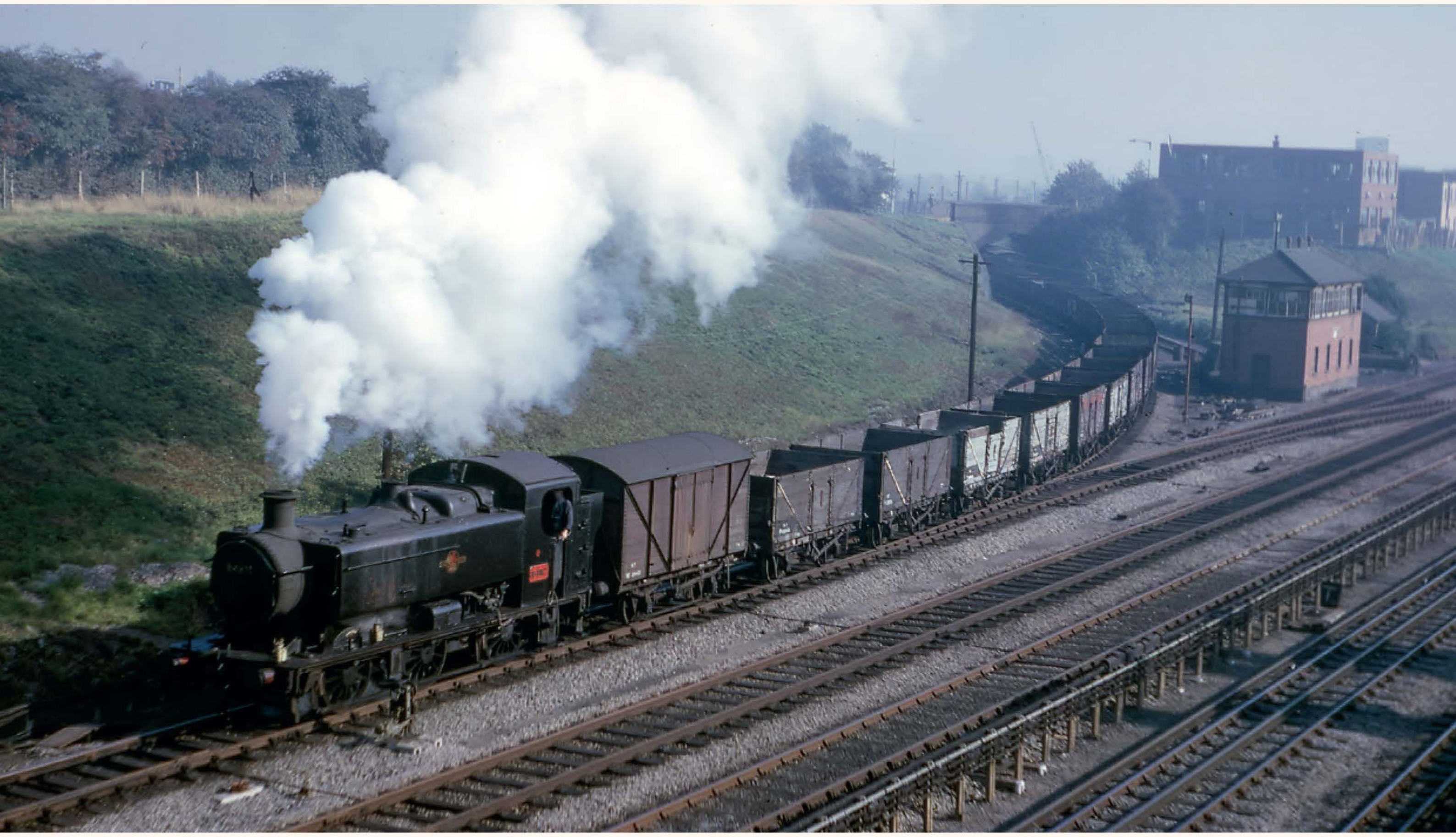


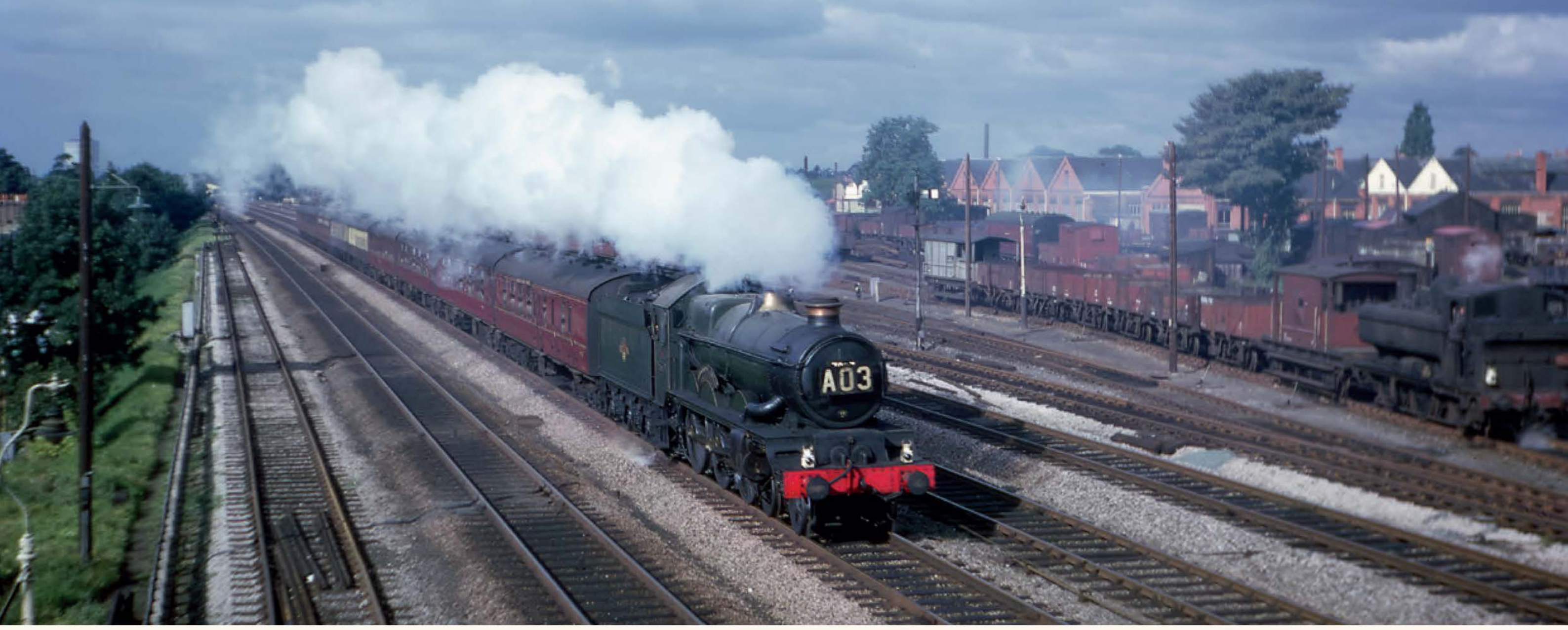


V

ABOVE: **A nicely cleaned 'Castle' Class 4-6-0, No.7009 *Athelney Castle,* is on the final stage of its journey to London heading past Old Oak Common with the 'Cathedrals Express' on 27th August 1962. It is passing beneath a massive girder bridge that carries the West London Line and A219 main road (note the London Transport bus) across the tracks of the former Great Western at this point. Linking the cities of Hereford, Worcester and Oxford with Paddington, the 'Cathedrals Express' was a restaurant car express which, in the 1961 summer timetable, was advertised to leave Hereford at 7.45am and arrive in London at 11.25am. The return train departed from Paddington at 4.45pm and was scheduled to arrive in Hereford at 8.30pm. There was a portion to and from Kidderminster, also serving Droitwich Spa, which was attached/detached at Worcester Shrub Hill.**

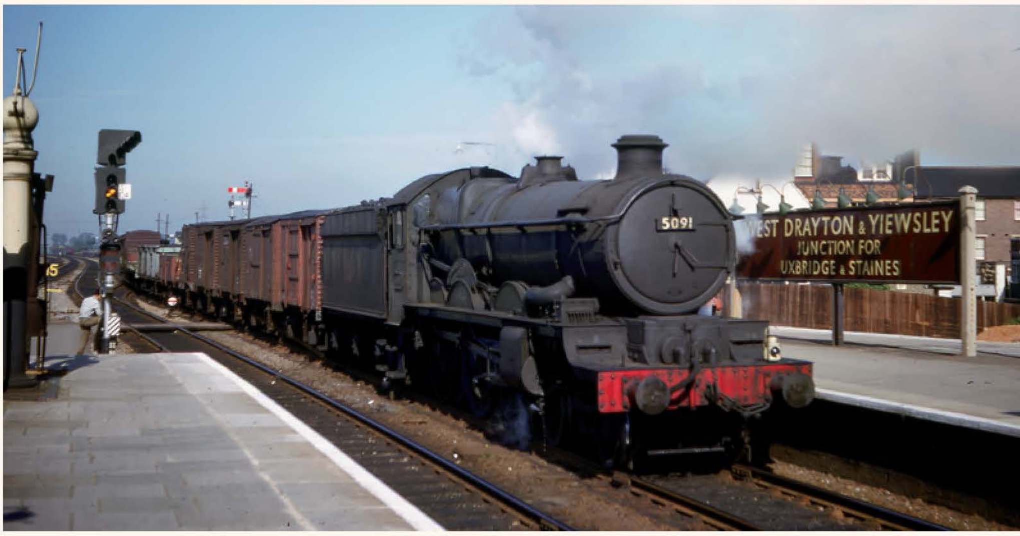
BELOW: **Photographed on 18th October 1962, a misty autumn morning, '94XX' Class 0-6-0PT No.8487 pulls a long train, consisting of a Vanfit and many goods wagons, out of the Park Royal industrial estate sidings and on to the Paddington to Birmingham main line. The estate had a distinguished visitor in the early 1960s when 'Castle' Class No.4073 *Caerphilly Castle* was loaded on to a Pickford's truck en route to the Science Museum. The tracks of London Transport's Central Line are just visible in the bottom of the picture on the right, the nearest station being Hanger Lane. The '94XX' Class was designed by Hawksworth, the first appearing in 1947, and a total of 210 locomotives was built by a variety of contractors but delivery was very slow with the last example being delivered in October 1956. By that time BR was building diesel shunters in large quantities with the result that some of the '94XX' engines had a working life of little more than five years – a dreadful waste of taxpayers' money.**



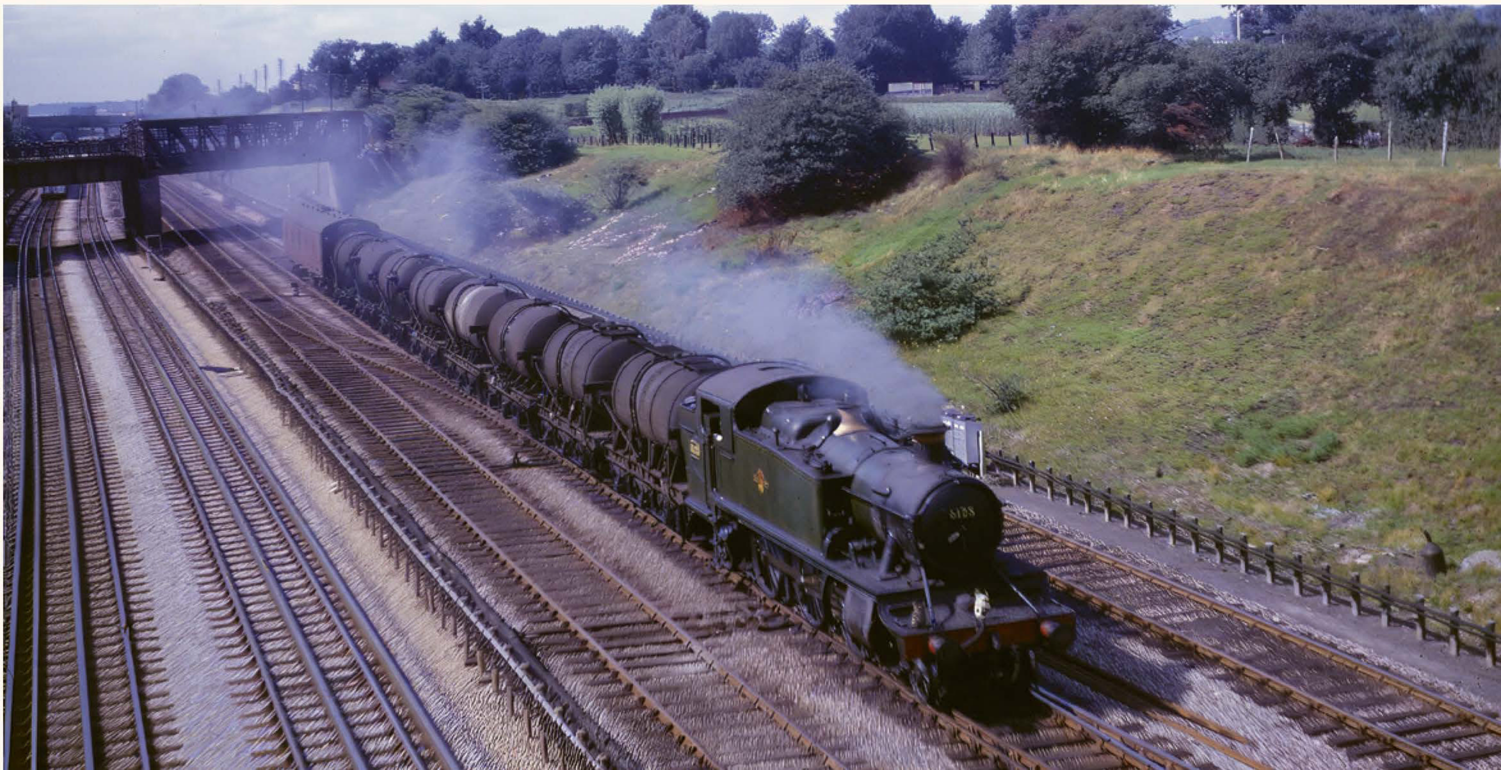


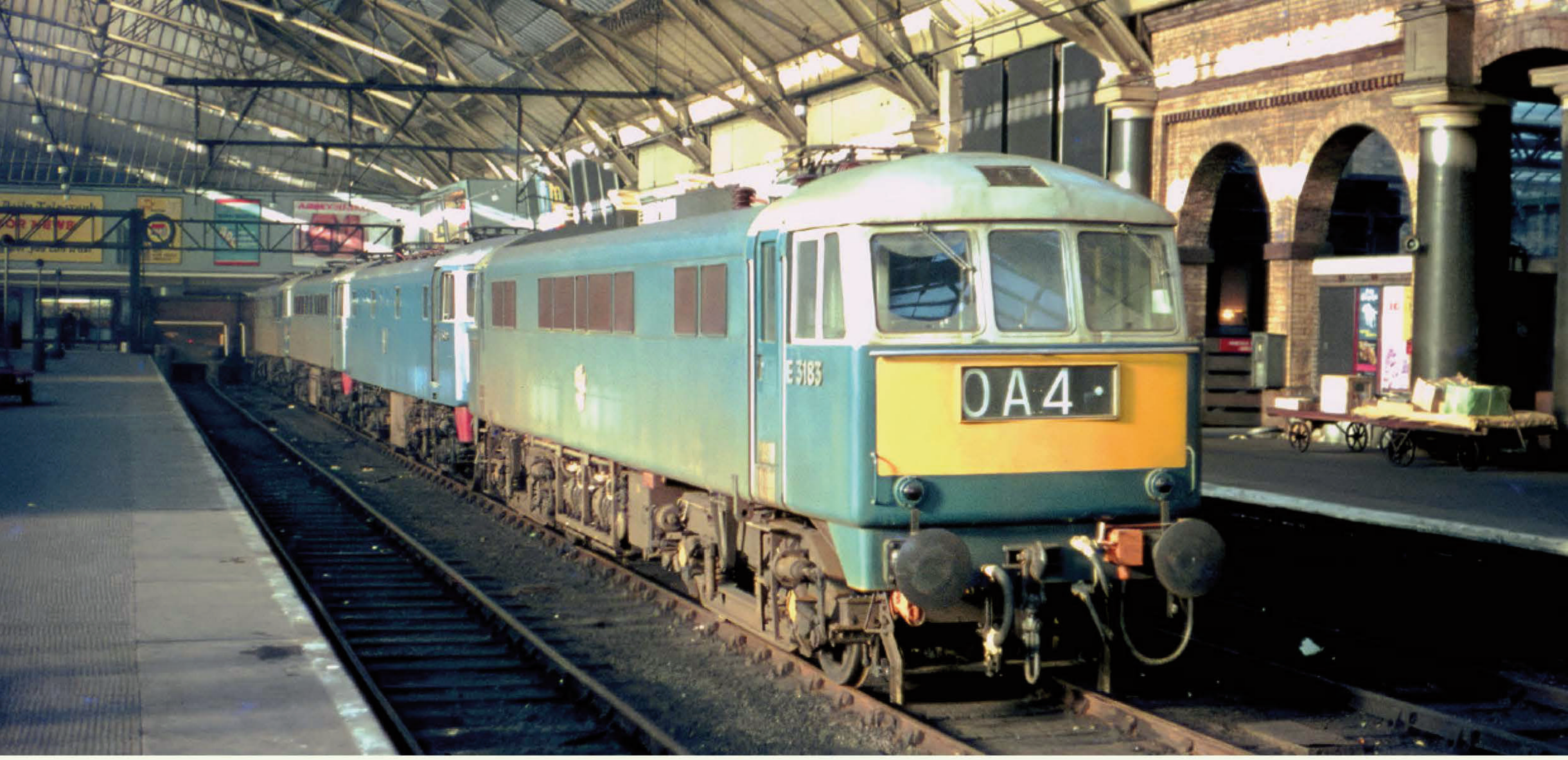
TOP: **A Worcester to Paddington express approaches West Ealing on 17th September 1962 with 'Castle' Class 4-6-0 No.7027 *Thornbury Castle* in charge whilst, on the right, an unidentified pannier tank locomotive is busy shunting in the goods yard. No.7027 was one of the last 'Castles' to be constructed, entering traffic in August 1949 after nationalisation. It was withdrawn in December 1963 after a short working life compared with earlier examples which attained 40 years in service.**

RIGHT: **The station name board on the right leaves readers in no doubt regarding the location of this picture depicting 'Castle' Class No.5091 *Cleeve Abbey* heading eastwards with a goods working on 12th May 1964. The name board, however, was misleading because the service along the Uxbridge branch had been withdrawn from 19th September 1962 while that to Staines was under threat, the axe falling on 27th March 1965. *Cleeve Abbey* lasted in service for a further five months until it was withdrawn in October after more than 40 years in revenue earning traffic.**



BELOW: **Seventy Class '61XX' 2-6-2Ts were constructed to Collett's design at Swindon in the 1930s for London suburban services, with the vast majority based in the London or Reading areas until they were dispersed following the introduction of diesel units in the late 1950s. However, the class was clearly versatile and here No.6125 is seen hauling a London-bound milk train near Park Royal on 18th August 1962. No.6125 entered service in October 1931 and, unlike most of the class, seems to have been a nomadic locomotive. It spent most of the 1950s allocated to Southall shed but by October 1960 it had migrated to Carmarthen and subsequently moved to Severn Tunnel Junction and later Neyland. No.6125 returned to the London area, being based at Old Oak Common at the time of this photograph, and was withdrawn in January 1965.**





It was common to find AC electrics stabled at several of the major WCML stations and AL6 No.E3183, together with an AL1, an AL5 and another AL6, were recorded awaiting their next assignments at Liverpool Lime Street on 28th May 1967. (David Ratcliffe)

THE WEST COAST MAIN LINE ELECTRICS A BR TRAFFIC STUDY

BY DAVID RATCLIFFE

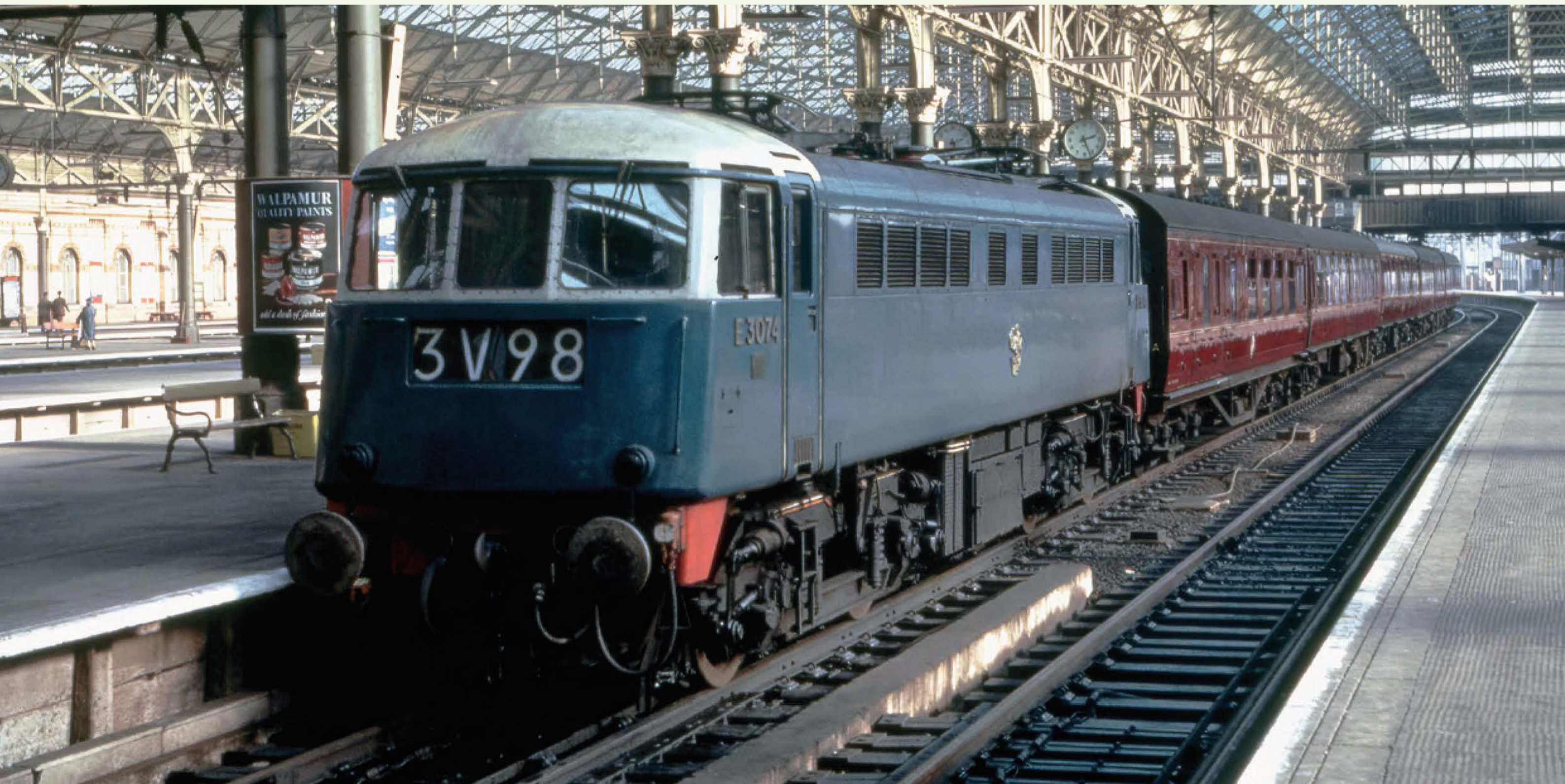
Passenger

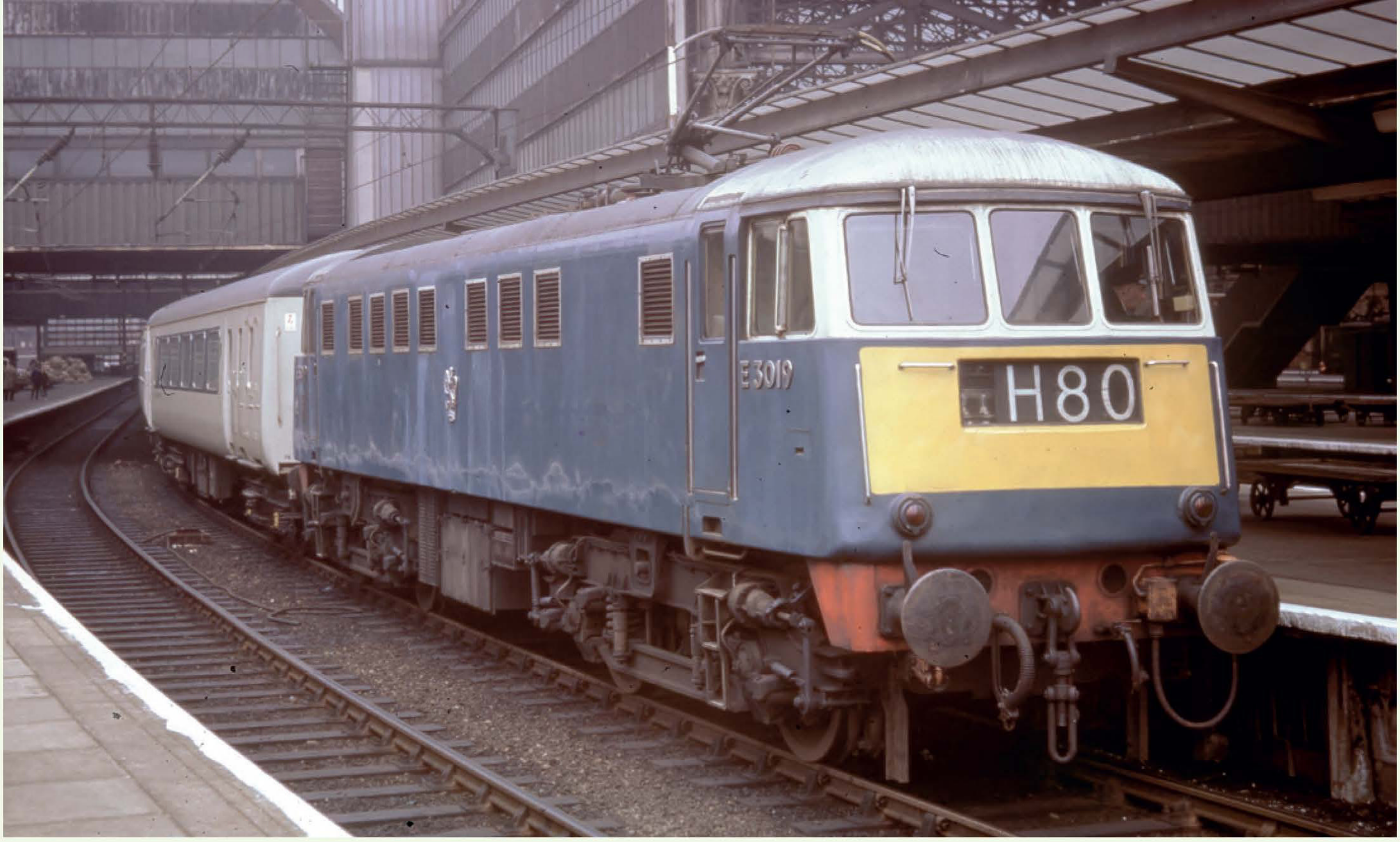
The first phase of the West Coast Main Line electrification opened between Manchester Piccadilly and Crewe on 12th September 1960 and in January 1962 electric hauled services also began running, via Runcorn, from Crewe to Liverpool Lime Street. Thereafter, the overhead catenary was gradually extended south from Crewe, eventually reaching London Euston in October 1965, with full electric services inaugurated the following April. Also electrified during this phase of the project were the lines from Cheadle Hulme to Colwich Junction and from Stone to Norton Bridge, as well as the route from Stafford to Rugby via Wolverhampton and Coventry, along with the Northampton loop.

To haul services over the newly electrified lines an initial fleet of 100 3,300hp Bo-Bo 25kV ac locomotives were ordered, the build being shared between five different manufacturers, although all the locomotives featured a number of common features including the cab layout and a 20-ton maximum axle load as specified by the British Transport Commission. The new electric locomotives were split into five classes, originally designated AL1 to AL5 (AL for AC Locomotive) and later Classes 81 to 85, while this initial fleet was subsequently joined by a further 100 25kV ac Bo-Bos, the AL6 introduced in 1965. Construction of these more powerful 3,600hp locomotives was undertaken at both Doncaster Works and the Vulcan Foundry in Newton-le-Willows, with the last of the AL6s entering traffic in October 1966.

From the outset British Rail planned using its new electrics to the fullest possible extent and as electrification progressed south

As BR's flagship route, the electrified WCML became an early recipient of new coaching stock but in the early 1960s a number of steam-heated pre-nationalisation vehicles remained in use, with twenty former LMS coaches converted into boiler vans. AL5 No.E3074 is pictured at Manchester Piccadilly in October 1963 with ECS for a Cardiff service formed of both BR and ex-LMS stock. (C. R. Gordon Stuart/Great Western Trust Collection/Colour-Rail.com DE1807)





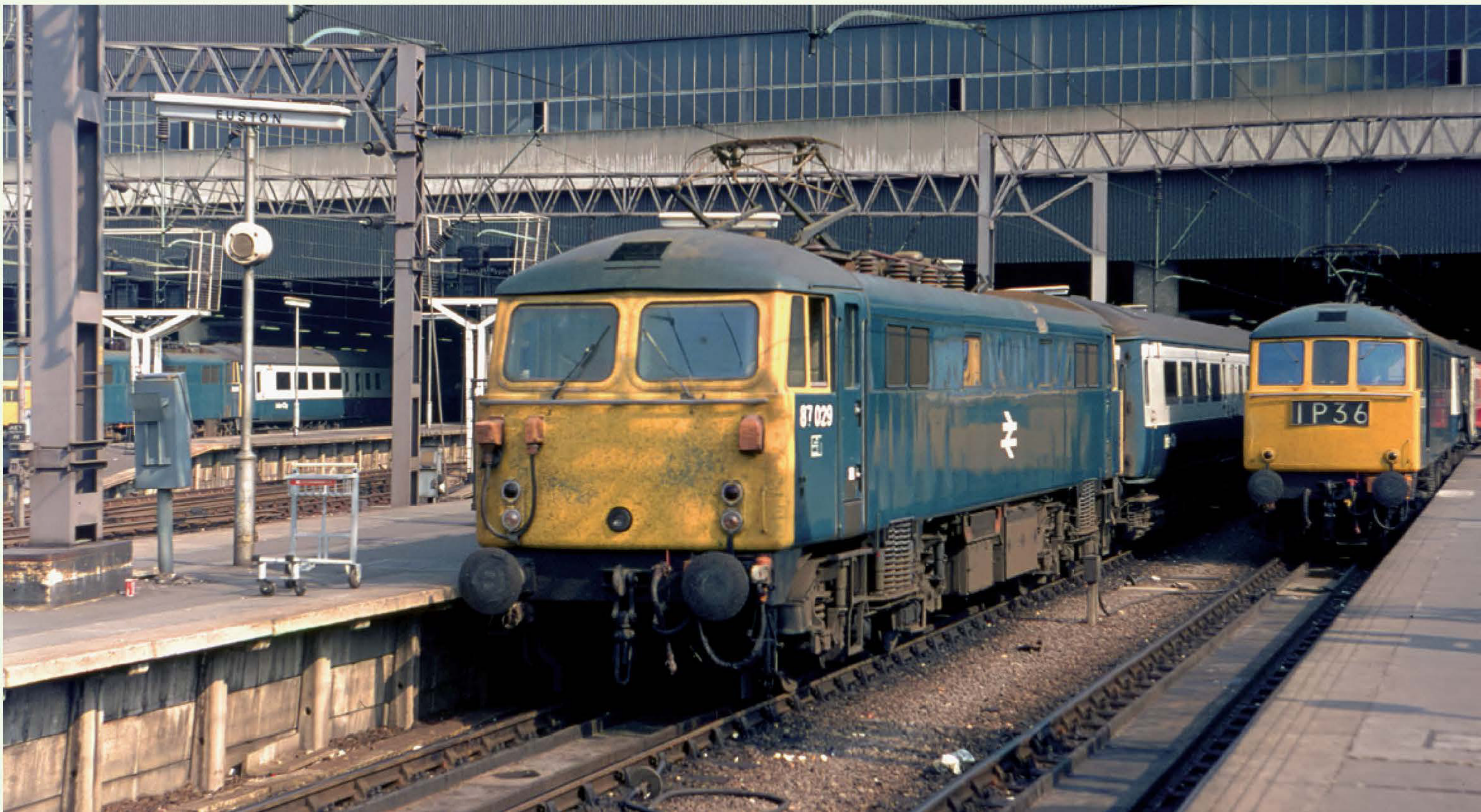
Having recently gained a yellow warning panel AL1 No.E3019 waits to leave Manchester Piccadilly for Longsight Carriage Sidings with the empty coaching stock of the down 'Manchester Pullman' in June 1966. A serious internal fire led to this locomotive's withdrawal in July 1971. (Colour Rail.com)

from Crewe the locomotive exchange point for passenger trains to and from Euston followed, first to Stafford in January 1963 and then later to Nuneaton, while from March 1967 cross-country workings from North West England to South Wales and the South Coast switched from electric to diesel haulage at Birmingham New Street.

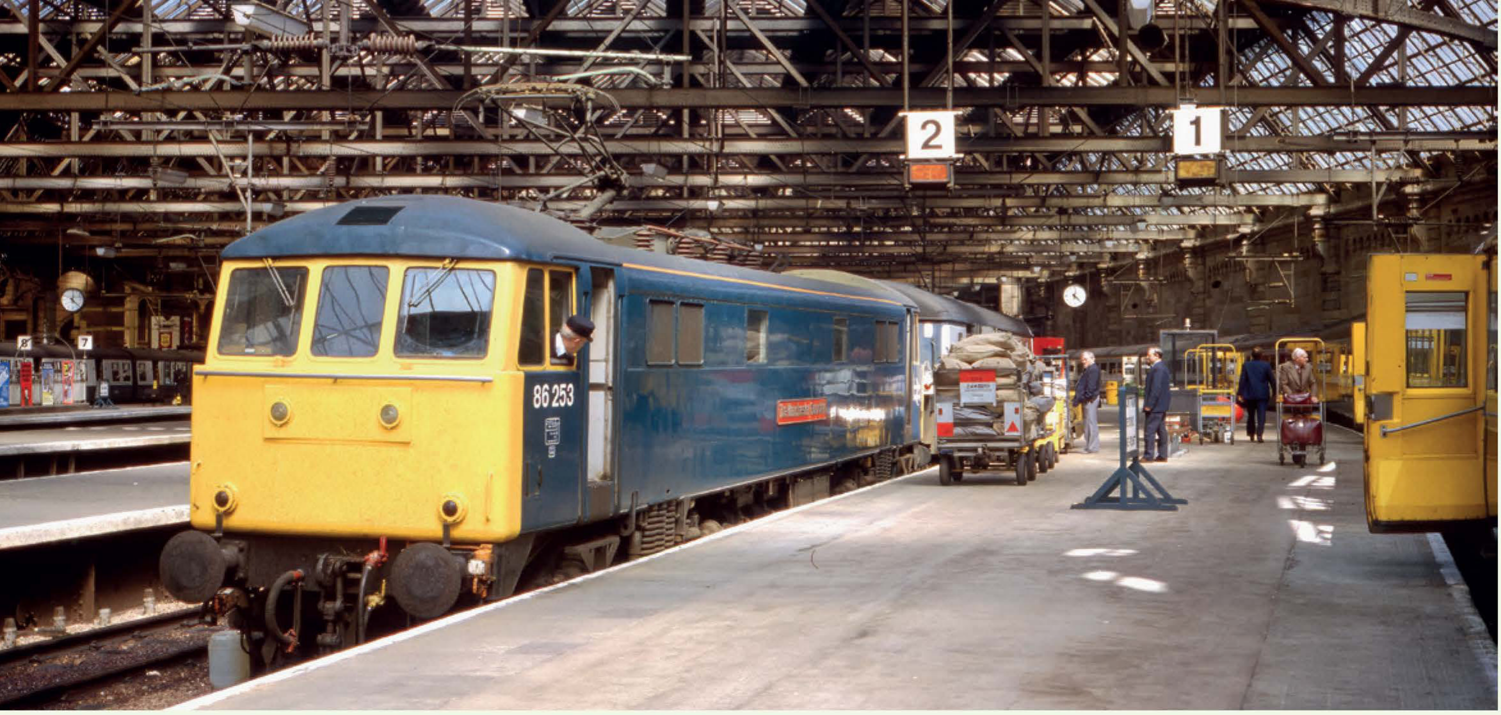
The original plan had envisaged gearing a quarter of the initial electric fleet specifically for freight traffic, although this was later reduced to just five. These were numbered E3301-5 but, aside from the intended No.E3305, even they were either delivered as conventional mixed traffic locomotives or else had their gearing modified as such after only a few months and were soon renumbered into the standard 'E3XXX' series. Initially the first 100 ac electrics were allocated to Manchester's Longsight depot, but this was later changed to a generic 'AC Lines' allocation with maintenance also being undertaken on the fleet by the depots at Allerton, Crewe and Willesden.

As all the 'AL' locomotives were dual-braked and fitted with electric train heating, they could be operated as a common pool, as evidenced in the records made by my father of journeys from Nantwich to Manchester between spring 1961 and summer 1963. Of the 30 trips we made as a family during that period, the express we travelled on between Crewe and Manchester Piccadilly saw AL1 haulage on a dozen occasions, while the remainder of the runs were shared equally between the AL2, AL3 and AL4 classes, with on two occasions the train we took being double-headed by a pair of AL4s.

However, as the decade progressed the electrical equipment, in particular the mercury



The evening peak at London Euston on 7th May 1976 finds No.87 029 preparing to leave with 1H17, the 16.55 to Manchester Piccadilly, while alongside an 86/2 waits to follow north on 1P36, the 17.05 departure for Blackpool North. Two years later No.87 029, which like all the class was fitted with an AEI cross-arm type pantograph from new, would be named *Earl Marischal,* an old hereditary Scottish title which had been forfeited when the last recipient took part in the Jacobite Uprising of 1715. (David Ratcliffe)



The driver of No.86 253 (E3136), named *The Manchester Guardian* in November 1980, looks back to check the progress of the station staff loading mailbags into the leading BG coach as he waits to leave Glasgow Central with a service for Birmingham on 12th June 1984. Like most of its class No.86 253 is fitted with a Stone-Faiveley AMBR single-arm pantograph. (David Ratcliffe)

arc rectifiers, fitted to the ten North British Locomotive Co.-built AL4s began to cause problems while their bogies were also found to be of poor quality, producing a distinctly rough ride. Consequently, once the delivery of the AL6 Class had been completed BR withdrew the AL4s, along with the increasingly troublesome AL3s, and all had been stored inside the closed steam shed at Bury by March 1967. Eventually all 25 AL3 and AL4 would be refurbished and returned to service on the WCML in the early 1970s, predominantly for parcels and freight, although three Class 83 were subsequently used for empty coaching stock working in and out of Euston until their final withdrawal in 1989.

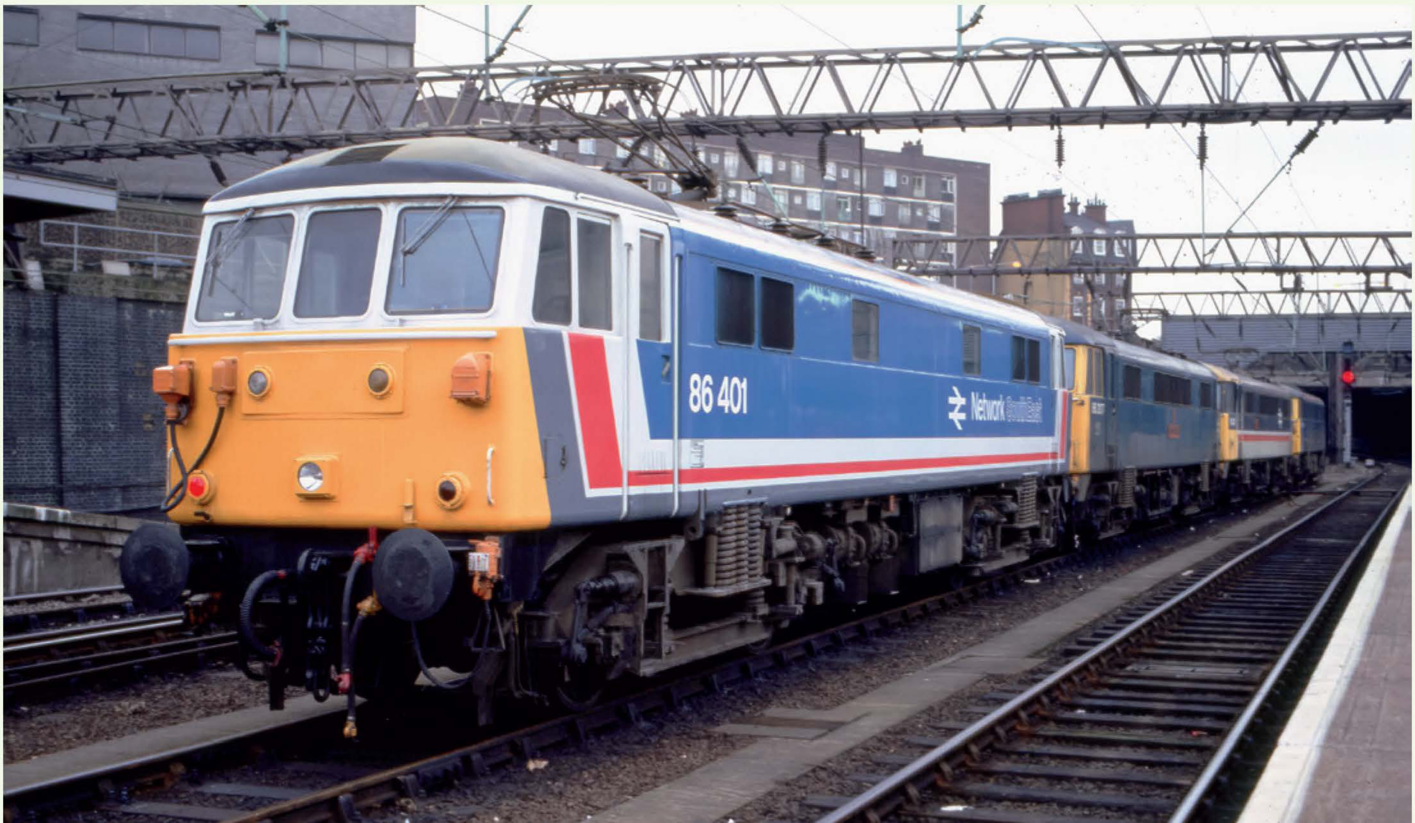
By late 1966 the AL6, supported by the Doncaster-built AL5, which had proved to be the most reliable of the early ac locomotives, were handling the majority of daily WCML passenger diagrams leaving the AL1s and AL2s increasingly confined to parcels and freight. However, examples of both classes did continue to be allocated to some of the summer dated Saturday services which ran from Euston to Blackpool, Morecambe, Llandudno and Shrewsbury, and which were electrically hauled as far as either Crewe or Wolverhampton, while subsequent problems with the AL6 saw some briefly return to front-line passenger work.

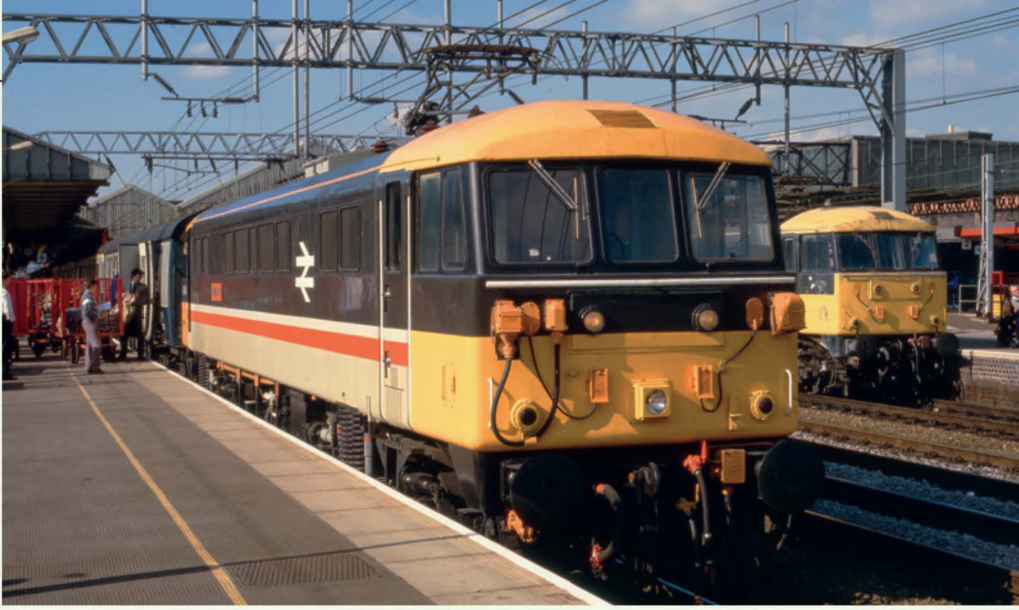
Unlike the AL1 to AL5, which had bogie frame-mounted traction motors, those on the AL6 were axle-hung and in 1969 it was found these were causing excessive track wear. As a result 52 of the class were fitted with flexicoil springs, new lateral and vertical dampers and SAB resiliant wheels. Renumbered as 86 201-52 the modified locomotives retained their 100mph capability while the unmodified AL6, which became Nos.86 001–48, were limited to 80mph and largely restricted to parcels and freight. In 1972 Nos.86 040-48 were also similarly modified becoming 86 253-61, while in 1980 it was the turn of Nos.86 011-29 to be renumbered as 86 311-29 when they were fitted with SAB resilient wheels. In addition, in common with the remaining 86/0, many of the 86/3 sub-class were also equipped with 34-way jumper cables for multiple operation.

Second phase

While the 86/2 modifications had provided the London Midland Region with sufficient 100mph capable electrics for its current

To coincide with the inauguration of electric passenger services to Cambridge in January 1987 No.86 401 (E3199) was repainted in Network South East colours, but it soon returned to the WCML and was one of four electrics pictured stabled between Platforms 15 and 16 at London Euston on 12th February 1987. Later that evening No.86 401 was booked to work 'The Master Cobbler' commuter train to Northampton. (David Ratcliffe)





On 12th August 1987 Inter-City-liveried No.86 416 (E3109), named *Wigan Pier,* waits in Platform 6 at Crewe station as mailbags are loaded on to its Liverpool to Euston working, whilst over in Platform 5, and sporting a slightly different version of the livery, No.86 413 (E3128) *County of Lancashire* prepares to leave with an Edinburgh to Birmingham service. (David Ratcliffe)

passenger diagrams, completion of the second phase of the WCML electrification from Weaver Junction to Glasgow, planned for 1974, would see the need for additional locomotives with the first three 86/2s. Nos.86 201-3 undergoing further modification during 1972. This saw them fitted with BP9 bogies and four new spring-borne traction motors with a continuous rating of 5,000hp for use as test locomotives for the final development of the third generation of WCML 25kV ac electrics, the Class 87, of which 36 were to enter traffic between June 1973 and March 1975.

The introduction of the 5,000hp air brake only Class 87, which were built at Crewe Works, coincided with the publication of British Rail's first comprehensive 'All-System Timetable' in May 1984, which not only detailed the new all electric-hauled London to Glasgow services but also featured an image of the class on the front cover. The 87s soon came to be known as the 'Electric Scots', a title derived at least in part from the welcome decision of the BR Board to resume the naming of express locomotives, with many of the names chosen for the 87s having a Scottish relevance. Initially only the 'Royal Scot' and the 'Clansman' Anglo-Scottish passenger services were booked for Class 87 haulage and while the class did soon become a very common sight along the northern half of the WCML, where they had no difficulty in hauling a typical train of a dozen coaches (430 tonnes) over even the steepest parts of the route at a constant speed, the 87s would always share the Glasgow workings with the 86/2s, as they did the passenger trains from Euston to Birmingham, Wolverhampton and the North West of England.

However, as the early MkII Pullman coaches then in use on the Liverpool and Manchester Pullman services, and the MkI sleepers used on the overnight trains out of Euston, were all vacuum-braked, these trains continued to be hauled by one of the earlier locomotives with Classes 81, 85 or 86 being common. The Class 81s and 85s also remained a common sight on cross-country trains running via Birmingham New Street until the mid-1980s, while meanwhile the new Class 87s, which had been fitted with multiple working equipment from the outset, were fully employed at night on freight workings (as detailed later).

No new passenger stock was ordered for the Glasgow extension, although the WCML had benefited from the introduction of MkII coaches from the mid-1960s, which from 1967 had included a number that were fully air-conditioned culminating in the MkIIf design. From the mid-1970s the locomotive-hauled version of the MkIII coach also began to appear in WCML services, a development that would eventually lead to the the withdrawal in May 1985 of the all-Pullman service to Manchester.

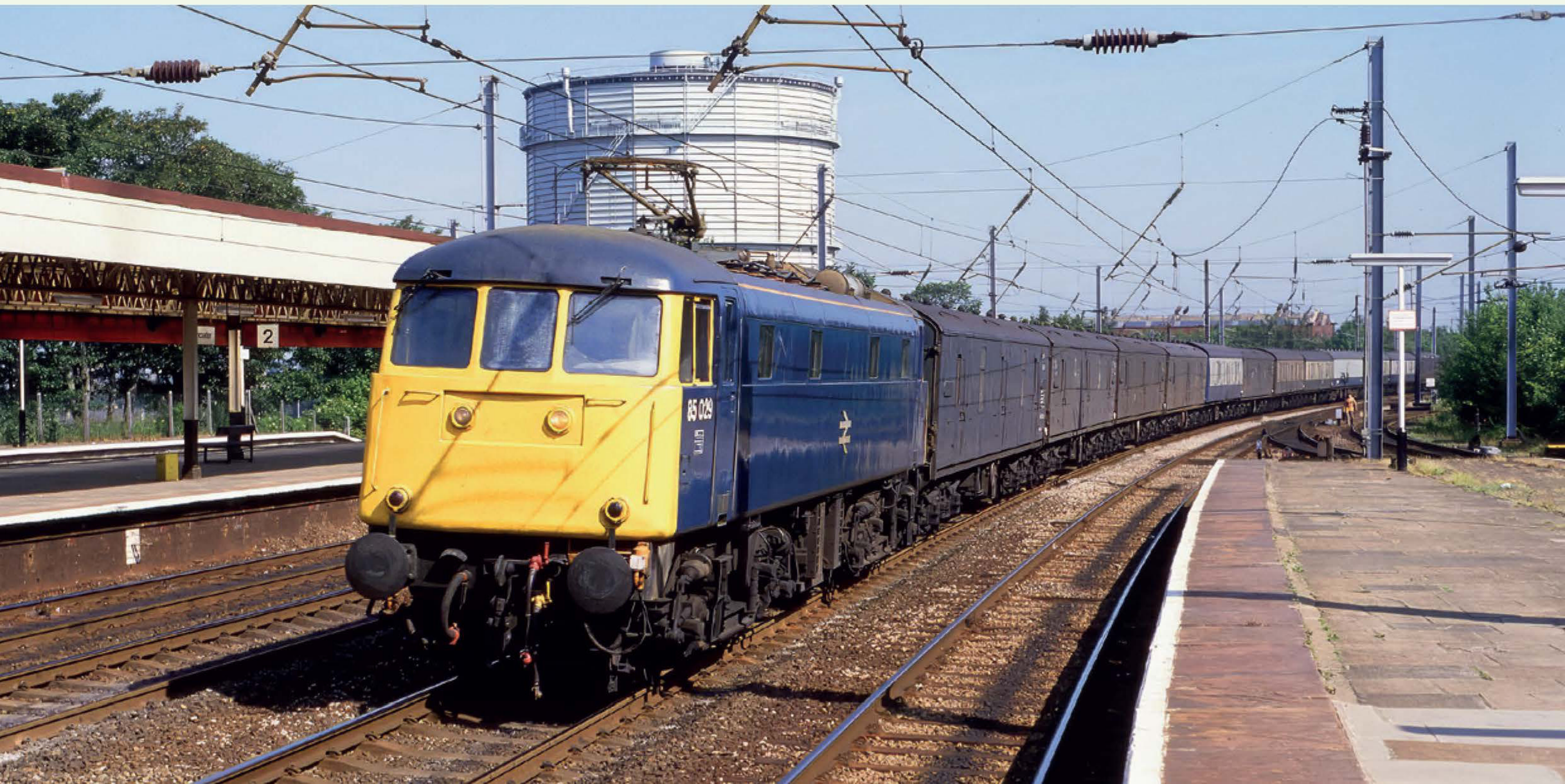
Class 90s

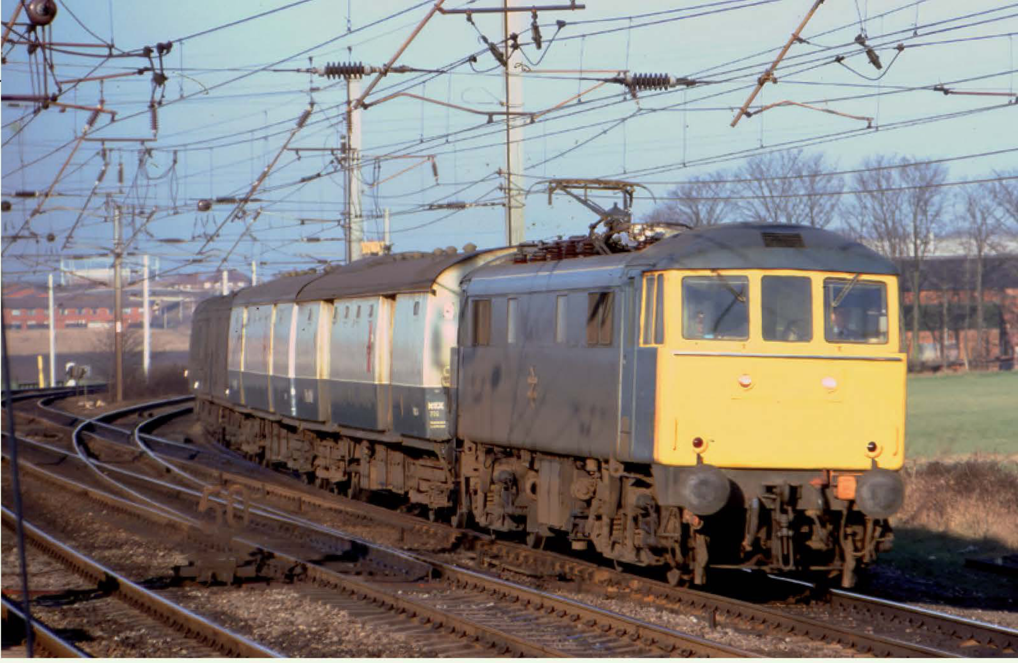
The next significant locomotive development occurred in 1984 when the 39 Class 86/0 and 86/3 were fitted with flexicoil suspension and numbered as 86 401-39 which, together with the introduction of the 50-strong Class 90 from July 1988, would hasten the withdrawal of the remaining Class 81 to 84s.

Built at Crewe, the 5,000hp Class 90 incorporated the latest traction control being fitted with TDM (Time Division Multiplex) push-pull equipment, although as their introduction coincided with the sectorisation of BR not all were dedicated to passenger traffic. Painted in Inter-City 'Swallow' livery Nos.90 001-16 were allocated to WCML passenger work while Nos.90 016-36, which sported a modified livery known as 'Mainline', were available for both passenger and freight duties unlike Nos.90 037-50 which were dedicated to BR's Railfreight sector.

A snapshot of daytime passenger activity recorded by the author at Crewe station in October 1989 produced 47 electrically-hauled workings, which were headed by seventeen different Class 87s, sixteen Class 86s and ten Class 90s, with four locomotives making more than one appearance during the six-hour visit. The various direct trains to/from Euston

One of the 30 AL5s built with germanium rectifiers, No.85 029 (E3084), heads south at Lancaster with 5J42, the 10.12 Carlisle Yard to Red Bank Carriage Sidings empty NPCCS, in July 1984. (David Ratcliffe)





No.86 007 passes Winwick Junction whilst returning the empty North Western TPO coaches from Carlisle to London Euston on 29th January 1986. (David Ratcliffe)

were shared between all three classes while the handful of cross-coutry trains witnessed running between Liverpool/Manchester and Plymouth/Poole were hauled by either a Class 86 or 90. These workings were also formed by a mix of early and later MkII coaching stock, usually with a MkI BG full brake in their formation, while several of the London trains, all of which were formed of air-conditioned MkII or MkIII coaches, also included a MkI BG.

However, a few were being operated in push-pull mode following the recent introduction of the MkIII Driving Van Trailers which had also seen the Class 86/2s and Class 87s fitted with TDM equipment. The final train noted at Crewe that October evening was the 18.05 from Euston to Carlisle, hauled by a Class 87 and formed of MkIIf stock with three air-braked GUV (General Utility Vans) assigned to Motorail traffic at the front of the formation, the use of bogie flat wagons for Motorail services having ceased in 1989. Disappointingly all the remaining Motorail services from Euston, to Aberdeen, Carlisle and Edinburgh, would end in May 1995.

Otherwise the passenger operation along the WCML would then remain largely unchanged until March 1997, becoming the last of the former Inter-City routes to pass into private hands when Virgin Trains received a fifteen-year franchise, at which time passengers services were in the hands of 35 class 87s, fifteen Class 90s and fourteen Class 86s.

Parcels

As with passenger services, the majority of WCML parcels and freight workings were electrically hauled in the BR era when running under the wires. Not only did these include mail, newspaper, and general parcels trains running between London, Birmingham, Liverpool and Manchester, and later Glasgow, but also many shorter distance workings such as 4K05, the 03.15 Stockport to Stoke-on-Trent, and 1A89, the 18.40 from Hemel Hempstead Parcels Siding to Euston.

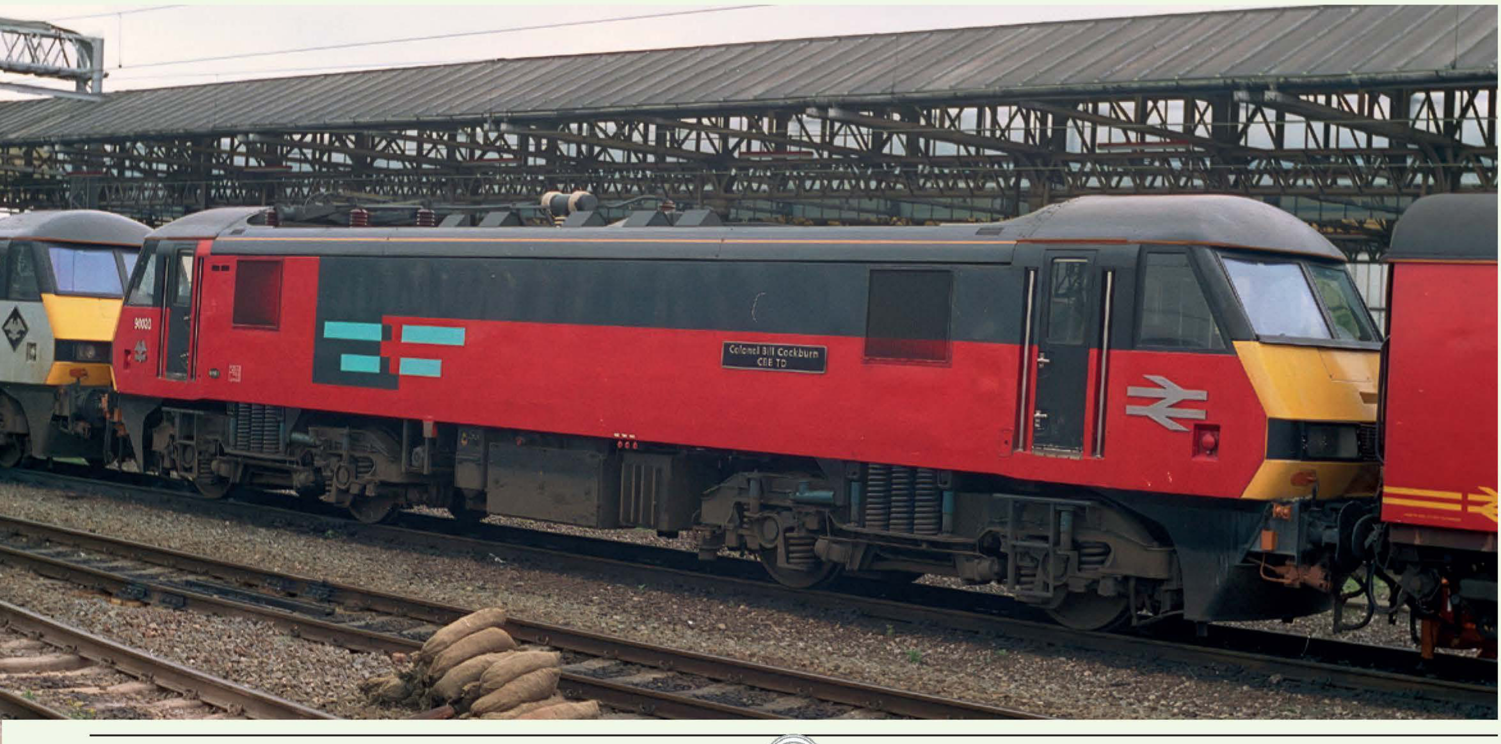
Indeed the extent to which BR maximised the utilisation of its investment in electrification was exemplified by 1E24, the 22.50 Shrewsbury to York mail train, which changed locomotives twice, at Crewe and Stockport, with the electric in charge for only 25 miles of the 125-mile-long journey.

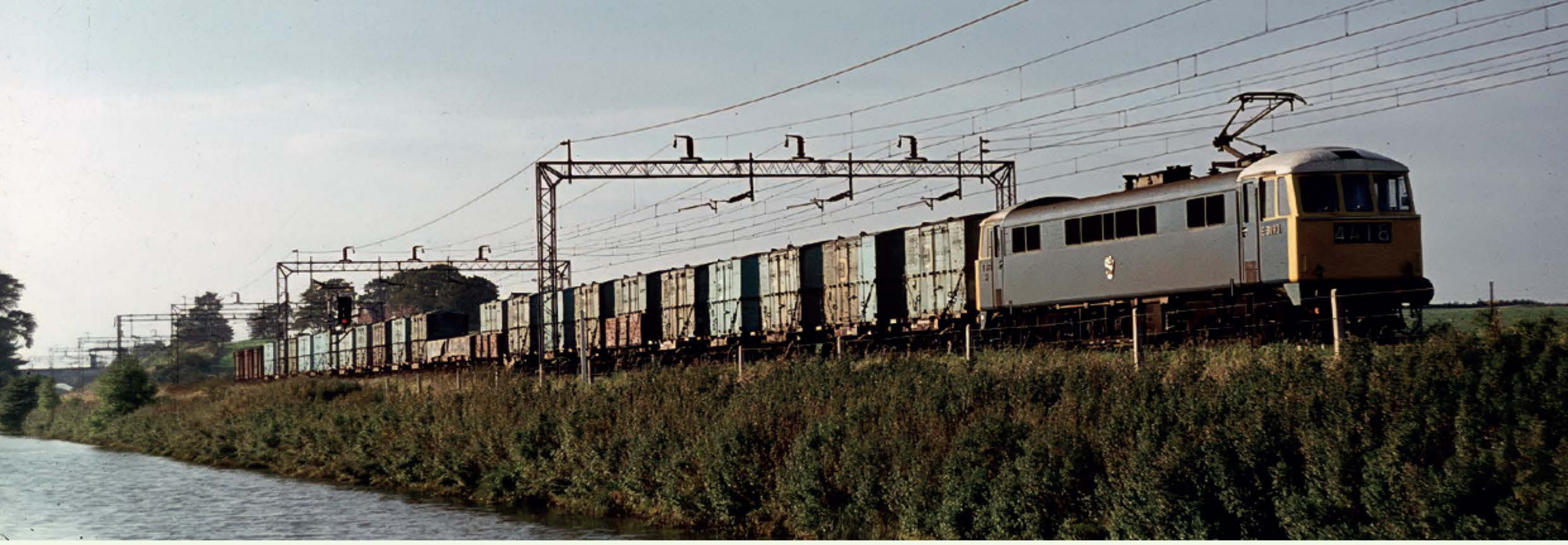
The bulk of BR's parcels business was conveyed overnight and until the 1990s the major interchange stations along the WCML, such as Carlisle, Crewe and Preston, would be hives of activity as mail vans, postal workers and station staff took the place of the daytime commuters and long-distance travellers, who by then would be asleep in their beds. Busiest of these parcels hubs was Crewe station which, between 9.00pm and 4.00am, dealt with over 40 such workings each weekday, of which over 30 would either be electrically hauled throughout or would switch from or to an electric during their stop at Crewe.

With much of the NPCCS (Non-Passenger Carrying Coaching Stock) used for mail and parcels traffic being vacuum-braked, at least until the 1980s, these trains were the province of any of the AL1 to AL6 Classes, although invariably an AL6 would be diagrammed to head 1S09, the Down West Coast TPO (Travelling Post Office) which left Euston at 20.45SX and, after calling at Bletchley. Birmingham New Street, Wolverhampton High Level and Stafford, would reach Crewe at 23.39. Here mail for Cheshire, Shropshire and south Lancashire would be unloaded at the same time as items destined for Scotland and the Borders were loaded on to the TPO.

After a twenty-three minute stop 1S09, usually the premier service of the day, would depart Crewe just after midnight and, after making further calls at Warrington Bank Quay, Preston, Carlisle and finally Carstairs, where the TPO portion for Aberdeen would be

Rail Express Systems were allocated five Class 90 Nos.90 016-20, the last of the quintet being named *Colonel Bill Cockburn CBE TD* at the RES launch event on 11th October 1991. No.90 020 also received full RES livery as pictured at Crewe when working 5M84, the 06.42 Edinburgh to Crewe South Yard empty NPCCS, on 12th June 1993. (David Ratcliffe)





In September 1968 AL6 No.E3193 runs alongside the North Oxford Canal near Brinklow with 4A18 the 11.20SO Holyhead to London Broad Street which it would haul between Crewe and Camden. Aside from three vans and two sheeted open wagons, the formation includes a number of ice blue-painted FM containers loaded with Irish beef which were being carried either on BR Conflat A wagons or in five-plank opens. Trains of FM containers carrying fresh meat from both Ireland and Scotland to London were a regular feature on the WCML at this date. (Trevor Mann Collection)

detached, eventually arrive at Glasgow Central for 4.00am. Also booked for AL6 haulage was 1M44, the Up West Coast TPO, which departed from Glasgow at 19.30 and after making the same stops as 1S09, plus additional calls at Lancaster, Coventry and Watford Junction, was due in Euston at 03.57.

Another priority working, which was also electrically hauled throughout its journey following the completion of electrification north of Weaver Junction in 1974, was 1P46, the Down North Western TPO. Departing from Euston at 22.50, this train ran via Birmingham and Crewe to Carlisle but their was no equivalent up working, the North Western TPO sorting coaches being returned to London during the following day by an early afternoon van train from Carlisle to Euston.

Whilst not as urgent as delivering the mail on time, the nightly newspaper trains, carrying the various titles printed by the presses in London and Manchester, were also given Class 1 reporting numbers to reflect their importance, with such services leaving London Euston at 22.10, 23.15, 01.30 and 02.10 for Preston, Manchester, Crewe and Northampton respectively.

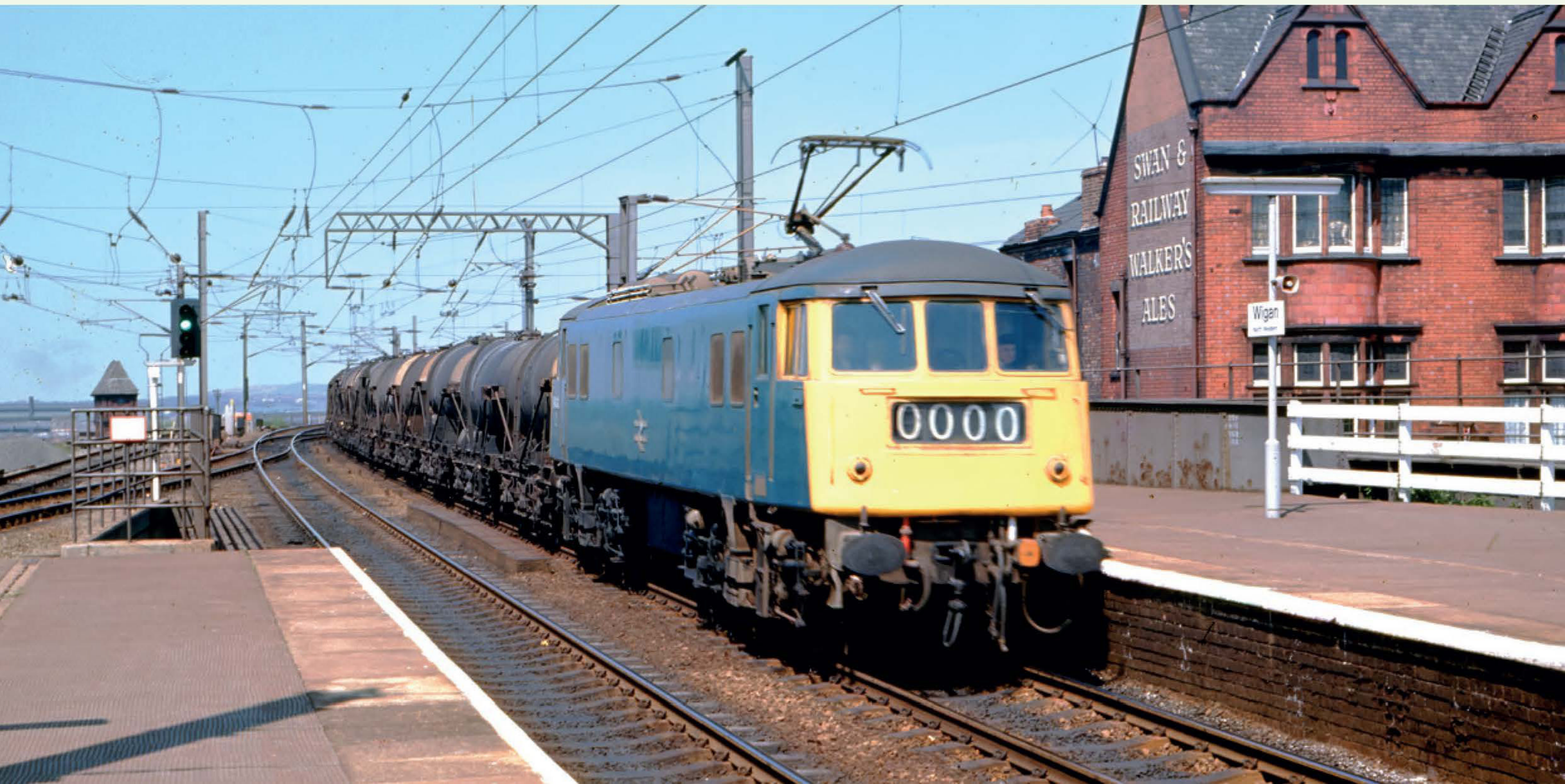
Newspaper trains also ran every night from Manchester Piccadilly to Crewe and Stoke with electric haulage, while the two newspaper trains from Manchester Victoria to Glasgow, 1S03 departing 22.41 and 1S04 departing 21.36, switched from a diesel to an electric locomotive at Preston. Like the TPOs these newspaper trains were diagrammed for AL6 (Class 86) haulage although an AL1 or AL5 was a common sight at the head of 1S03 and 1S04.

One of the earlier electric locomotives would also usually haul 5J42, the 10.30 empty NPCCS from Carlisle Yard to Manchester Red Bank Carriage Sidings, as far as Preston, with many of the empty newspaper and parcels vans forming 5J42 having earlier made their way to Carlisle in 5M25, the 05.5 from Glasgow Parcels Station.

Classes 81 to 85 were also to be found on other long-distance Anglo-Scottish parcels trains such as the 19.35 Glasgow to Euston, the 21.00 Glasgow to Bristol and their equivalent northbound workings, while they also often headed the nightly ‘Tartan Arrow’ private parcels trains which ran between Bridgeton, Glasgow, and Kentish Town, Cricklewood, and which were usually electric hauled between Polmadie and Crewe Basford Hall.

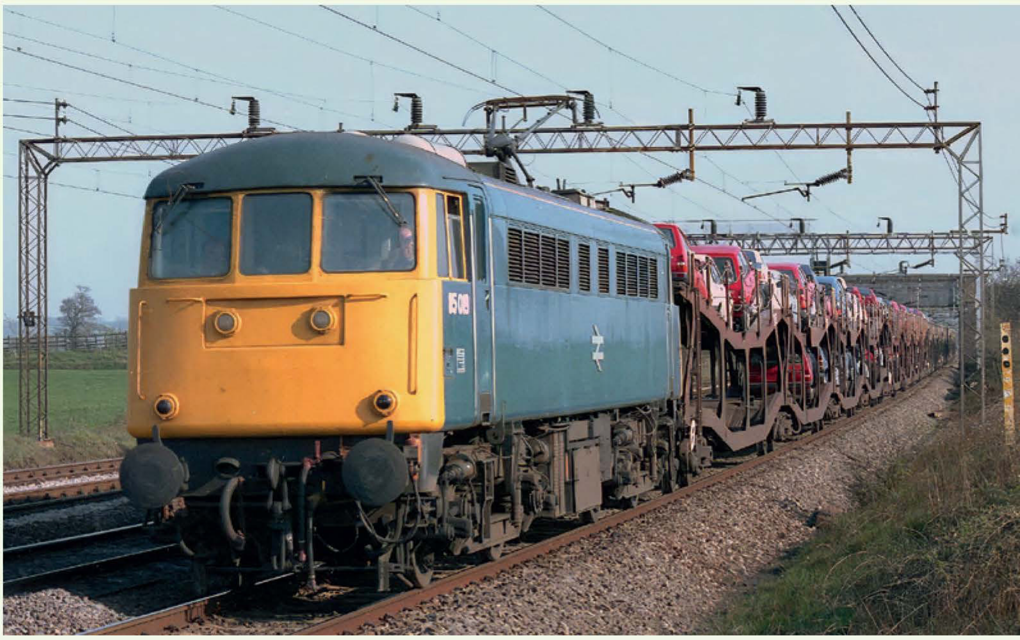
General parcels services running between London and North West England were also diagrammed for the early electrics, much of Liverpool’s parcels traffic being handled at Wavertree PCD (Parcels Concentration Depot) where a number of sidings had been wired. In Manchester the former Mayfield passenger station, situated adjacent to Manchester Piccadilly, was reopened as a PCD in July 1970 and a section of its approach track electrified. Mayfield would remain busy until the early-1980s with up to a dozen services a day with much of the traffic it handled being generated by the numerous mail order businesses then located in and around Manchester. However, as consumer shopping habits changed this business declined sharply in the mid-1980s and the PCD was closed in 1986.

The last Class 84, No.84 010 (E3045), heads south through Wigan North Western with 6V34, the 07.05 Carlisle to Swindon empty milk tank train, on 4th June 1977. After 1965 milk traffic over the WCML only ran for a couple of months each year, before ending completely in 1978. (David Ratcliffe)



That year Royal Mail also ended its parcels contract, leaving British Rail's parcels operation facing an uncertain future, particularly when in 1987 first News International and then The Mirror Group transferred their newspaper distribution to road. Consequently, having lost over half of this traffic, BR terminated its operation of dedicated newspaper trains in July 1988.

However, 1988 also saw the signing of a new five-year contract between BR and Royal Mail for the carriage of letter post and, together with BR's own Red Star premium parcels traffic, it was hoped these would be the mainstay of the parcels business which in October 1991 was rebranded as Rail Express Systems (RES). Unfortunately even along the WCML such traffic continued to decline with only six mail/parcels trains leaving London Euston each evening, compared with fourteen some twenty years earlier, and it was a similar story elsewhere with both Glasgow Central and Manchester Piccadilly hosting only four such trains a day. On the plus side the sector's remaining TPO coaches, general utility vans and full brakes were now fitted with air brakes while the RES locomotive fleet included a small number of Classes 86/2, 86/4 and 90.



A familiar sight on the WCML were the trains of Cartic-4 wagons which conveyed new cars between Dagenham and Halewood. No.85 019 (E3074) powers north at Madeley with 4M30, the 11.30 from Dagenham, on 28th March 1984. (David Ratcliffe)

Freight

Given the lack of overhead wires at most private sidings associated with the WCML, the use of electric traction was more challenging in terms of freight workings. Nonetheless, as the catenary advanced south during the 1960s the merchandise freights running from BR's Manchester Ancoats and Trafford Park terminals to Camden, Cardiff, Eastleigh and Fratton were allocated an electric for the run from Stockport as far as either Crewe or Bescot, and this was also the case for the local Class 8 freight working between Brewery Sidings, Manchester, and Crewe's Basford Hall yard.

Trunk vacuum-braked wagonload freights from Bescot, Toton and Warrington to Willesden were also electrically hauled, those from Toton changing traction at Northampton, while even the Departmental trains operating between the civil engineering yards at Nuneaton, Rugby and Willesden were booked for an electric locomotive until the late 1970s.

Furthermore, even when running between unwired private sidings some company trans enjoyed an electric up front for at least a part of their journey, amongst them the block oil trains from Mobil's Coryton Refinery to Hawkesbury Lane which an electric would haul between Willesden No.6 Sidings and Coventry Goods, and the weekly working of paraffin wax from BP's Grain Refinery to the ICI chemical plant at Burn Naze, near Fleetwood, which had electric haulage from Willesden to Crewe Basford Hall. The weekly train of naphtha which ran for several years between the West Midlands Gas Board at Washwood Heath and the North West Gas Board siding at Ordsall Lane, Salford, also had electric haulage between Bescot and Warrington.

In 1963 the loops alongside the main line at Halewood, between Liverpool and Runcorn, were extended and electrified to serve the newly opened Ford Motor Co. factory, with a two-way flow of trains conveying finished cars and automotive components between there and Dagenham which only needed a single change of traction at Willesden.

Even the short ¾-mile freight-only branch in Runcorn from the station to Folly Lane yard was also wired. At Folly Lane yard traffic from ICI's Castner-Kellner and Rocksavage Works was exchanged with BR and consequently not only the nightly ICI charter service from Runcorn to the ICI distribution depot at Willesden, which conveyed caustic soda, sulphur dioxide and various solvents, was electrically hauled throughout but also 6F52, the 21.32 to Wallescote Sidings. Leaving Runcorn Folly Lane with its train of loaded caustic soda tank wagons, the electric would reach Hartford LNW Sidings, a mile south of Acton Bridge, with 6F52 at 22.02 after completing a journey of less than eleven miles. From Hartford an ICI locomotive would haul 6F52 the rest of the way along the privately operated Wallerscote Light Railway to Wallescote Works. However, such a short electric freight working as 6F52 was unusual and as the demands on the electric fleet grew it went over to diesel haulage in 1974.

Among the fastest freights along the WCML were the Freightliners running from Willesden FLT to the FTLs at Glasgow, Coatbridge, Garston, Longsight and Trafford Park. Electrics also hauled the Halewood to Parkeston Ford Motor Co. Freightliner, as well as the Rootes Freightliner which ran between Linwood and Gosford Green once the wires had gone up over the northern fells.

At the same time as installing the overhead, modernisation of the northern section of the WCML also encompassed a major track rationalisation and, with the removal of many catch points unfitted and partially-fitted freights were then banned from the route and diverted over the Settle–Carlisle line, although as the 1970s progressed such freight would slowly disappear as BR's remaining wagonload business gradually transferred to its expanding Air Braked Network or was lost to road. Amongst the ABN workings were services linking Glasgow Sighthill Freight Depot with both St. Blazey and Willesden which, like the Freightliners on the route, were often headed by a pair of electrics to speed them over Shap and Beattock.

Double-heading was also required for the three or four daily 1,000-ton-plus British Steel Corporation trains which conveyed semi-finished steel coil or slab from the BSC works at Ravenscraig, near Motherwell, to those at Port Talbot and Shotton, with these trains switching traction at either Crewe or Warrington. North of Warrington Bank Quay a pair of electrics also often hauled the weekly UKF Fertiliser van train from Ince & Elton to Lugton, as well as the twice-weekly trainloads of soda ash that ran from Northwich to Larbert.

However, not all company freight along the WCML required double-heading, with a single electric the norm on such workings as the British Oxygen Co. trains from Ditton to North Wembley and the aforementioned Ford trains to and from Halewood. Others that only warranted a single locomotive were the twice-weekly trains that carried liquid petroleum gas from the Shell oil refinery at Stanlow to the BSC quarry and works at Hardendale, near Shap, where the LPG was used to fire the lime kilns.

At Hardendale the loop and two sidings were wired, so that in addition to the trains from Stanlow electric locomotives were used, either singly or in pairs, to haul the outbound trains of lime and limestone destined to Ravenscraig steelworks.

Following sectorisation in the late 1980s the freight sector received its own locomotive fleet, which for traffic along the WCML included fourteen of the new Class 90s together with the last Class 87, No. 87 101, this having been built with an experimental thyristor power control system. Most of the surviving early ac electrics spent their final days hauling freights, including fourteen Class 85s which were renumbered as 85/1s after they had their electric train supply jumper cable removed, while the 39 Class 86/4s also had their train heating equipment isolated and were renumbered as 86/6s and allocated to freight traffic.

Shortly before the First World War T14 Class 4-6-0 No.445 passes through Surbiton with a train for Bournemouth West via Sway.

SOME NUGGETS FROM A

Discovered by **JEREMY CLARKE**

Photographs from the Lens of Sutton Collection

I have a fascination for bookshops that stock 'Remainders', sometimes admiring the optimism of publishers over issuing the dustier of these volumes. More than 40-odd years ago I picked up one such book in just such a shop close to South Kensington underground station, a book so interesting and informative I still wonder why it found its way there. The price on the flyleaf is quoted as '55s, £2.75', just post-decimal then. But a single swift sweep of a pen – a proper ink one – deletes them both and '25/-' is writ large and defiantly in their place.

The book is a facsimile published by Ian Allan of the London & South Western Railway Summer 1909 Working Timetables and appears to be at least the seventh in a series. Of about A5 format in size the printed matter, despite the small typeface, is some 1¼in thick. Perhaps as a sign of its importance the print in the opening pages of each section uses no fewer than nine different fonts.

The book is divided into the three Districts, Main Line and Central – the 'Main Line' turns out to be Waterloo–Southampton and not Waterloo–Salisbury–Exeter as might be expected – Metropolitan District, and Western and Salisbury & Yeovil. Separation of the Central and Metropolitan Districts is curious when the two would be considered nowadays as one, but then the furthest parts of present-day London were not yet considered as outer-suburbia. Segregating the Salisbury & Yeovil as a separate concern is also interesting given it came into South Western ownership in 1878. Authorised to the LSWR in 1848, squabbling among shareholders and between them and the board stymied the process to construction. The independent but capital-poor S&YR received sanction instead, the South Western rather smugly standing by anticipating its failure as it struggled for finance. However, Gillingham was reached in May 1859 and Yeovil on 1st June 1860, six weeks before the South Western opened onwards to Exeter. On purchasing the Salisbury & Yeovil eighteen years later, the South Western found this 'poor' company was now of such value it had to hand over £260 of its own stock for each nominal £100 of S&YR shares.

Even briefly summing up the volume of information in the book is difficult if not impossible within the bounds of a single article so I have concentrated on the Main Line and Central District because it probably has the greatest variety of workings.

What follows the title page is enlightening. For example, two pages cover instructions for supplying every signal box, no matter how remote from a station, with coal and stores, usually accomplished by loading the footplate of a station pilot and despatching it accompanied by the station master or senior porter. In other instances the supplies will be in the care of the guard on a local freight. There follow Mixed Trains instructions under the Regulation of Railways Act 1889, rules to do with the speed of various types of train, pages of locomotive weight limits permitted on the routes, and permanent speed restrictions imposed by companies over whose lines LSWR trains travel. Then come 28 pages of close type listing every time alteration since the last issue, no matter how minor.

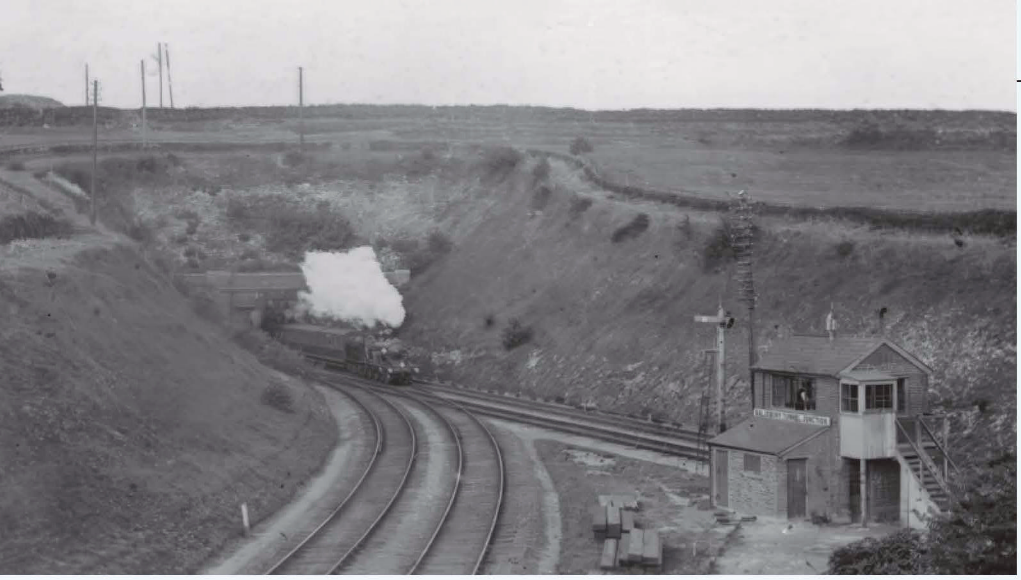
One immediate timetable anomaly is that trains are consecutively numbered in both up and down directions, unlike the long-held subsequent practice of allocating odd numbers to down trains and even numbers to up ones. Then, of course, the 24-hour clock is not used, each column noted 'am' or 'pm' as appropriate. Distances are marked from Waterloo, the 'Main Line' having two sets, via Winchester and via Alton, that being 57 chains shorter.

There are inevitably some peculiarities: the New Malden (then Coombe & Malden) to Teddington line and the Hampton Court branch appear in this section, but Epsom, the Guildford New Line, Weybridge–Virginia Water via Chertsey and the Portsmouth Direct are all omitted though references are made to all four in individual headings. One such reference is to down train No.21, the 1.40am Portsmouth Goods (Not Mondays), which passes Hampton Court Junction at 2.12 with the note following that it travels the 'Claygate and Guildford Line'.

Examples of traffic that is no longer carried include the simultaneous departures from Waterloo at 3.00am of No.30, a newspaper train to Portsmouth via Eastleigh – a service that continued to the end of SR steam – and No.31, a milk churn train to Yeovil which, incidentally, was already three minutes behind the former by Queen's Road, only 2¾ miles out.

Nos.96 and 97 down are both noted as 'Cattle Wednesdays only when required', the one from Basingstoke to Winchester, the other Alresford to Southampton. Other apparent anomalies show in trains numbered 166/7/8, for all leave Waterloo at 9.20am for, respectively, Bournemouth, Fareham and Southampton Terminus. One finds after exploration that these form a single train that sheds portions en route as it progresses down the line. The letter 'B' at the head of the column for No.166 points to a footnote which reads "Runs on Local Line from Woking East and Through Line from Woking Junction to Basingstoke East, except when 9.28am Boat Train runs, when it will run on Local Line Marsh Lane Box to Woking and follow Boat Train at latter point, and when 9.45am Boat Train runs it will run on Local Line from Basingstoke East and follow the Boat Train from Worting Box." There is

Whitchurch North in 1906 with C14 Class 2-2-0T No.742 and the two-coach branch train for Fullerton Junction.



Tunnel Junction, Salisbury, c1912 with an up train emerging from Fisherton Tunnel.

A WORKING TIMETABLE

also a comment that the call at Surbiton is to pick up only. The 9.28 Boat Train runs ‘When Required’, the 9.45 only on Wednesdays, but again ‘When Required’. I wonder if a signalman ever got it wrong!

No.176 down is headed ‘Windsor to Guildford’, a throwback to a route no longer possible without reversal at Staines as it made use of the north to west curve there, its ‘line’ now at street level and part of the road by-passing the High Street. This train also appears in a later table covering the ‘Windsor Lines’ which include Neasden, Brent and Willesden via Acton Wells for freight workings.

Having taken no fewer than 110 pages to dispose of the Main Line and its three specified offshoots, I expected one or other of the lines branching off the Main Line to follow, or the continuation from Basingstoke towards Salisbury. But no! It is one page detailing Didcot, Newbury & Southampton line services although these have already appeared in the previous timetable. But this one also includes Winchester ‘Didcot Line’ station [Chesil] though nothing north of it – Great Western Railway territory! As the Winchester to Shawford Junction section is single track the column headings specify the issue of Staff or Ticket to permit the driver entry to it.

Next is a summary of trains between Eastleigh and Southampton. There are some puzzling anomalies here. Why, for example, does the London–Royal Pier service arriving at Southampton at 7.52am show in this and the Main Line table, but a train from Portsmouth that joins the main line at St. Denys, due at Southampton at 8.25am, only appear in the Summary? The following goods from Fratton is treated likewise.

Further perusal leads me to the conclusion that tables appear roughly in the order in which the lines to which they refer are situated the further west one travels, with each specific tentacle of those lines considered in turn irrespective of their relative importance. This is illustrated by the next three tables, Bentley and Borden Light, Basingstoke and Alton Light (of *The Wrecker* and *Oh! Mr Porter* fame) and the ill-begotten Meon Valley, suffixed Alton and Fareham Line.

Basingstoke–Salisbury follows next, breaking up the continuing series of byways but nothing further west, of course. Shown in this section is the sequence of trains that, in part anyway, later caused a further widening of the irreparable rift between Superintendent of the Line Henry Holmes and General Manager Herbert Walker. The long-standing mid-morning Plymouth Express, leaving at 10.45, is followed at 11.10am by the Torrington train, both fast to Salisbury in 91 and 94 minutes respectively. But from the 10th July to 29th September a North Cornwall Express leaves between these two at 11.00am. That also is non-stop to Salisbury in 94 minutes. All three trains change engines at Sarum, allowed five minutes to do so, but that means the 11.10 comes into Salisbury on the heels of the 11.00 when it runs. Records published by both Allen and Nock indicate the choice of engine from Waterloo appeared to be arbitrary and a Drummond ‘double-single’ leaving Waterloo on the 10.45 usually had some difficulty keeping the tighter schedule with any load exceeding 200 tons. Thus, even the thirteen minutes between the departure of the first of the trio from Salisbury and the arrival of the second did not always prove adequate, though engine changing there was renowned for its slickness. The five minutes between departure of the second train from Salisbury and the timely arrival of the third could be even more problematic, especially if the former were headed by a double-single! How did things work out when, at the end of the nineteenth century, all three ran regularly but left Waterloo at ten-minute intervals, 10.50, 11.00 and 11.10, the last of the trio ironically being booked to Salisbury in the fastest time?

In this table too a train of ‘Loco Coal Empties’ departs Nine Elms at 7.15am, its sluggish progress meaning it takes until 9.38am to reach Basingstoke where it sits for half-an-hour to permit the crew to take their morning brew and the 8.50am Waterloo–Plymouth train to pass. Fifty minutes are then required to cover the mainly downhill 18½ miles to Andover Junction for a 1½-hour lunch break, followed by a slow tailing of the 11.10 Waterloo–Torrington train for the 6½ miles on to Grateley. Here another one-hour stop is scheduled during which the 11.15am Waterloo ‘summer only’ departure for Exeter passes. Salisbury is finally reached at 2.15pm, seven hours after setting off from London. Though no pick-up points are stipulated it seems likely empties may have been gathered on the way, from Basingstoke shed for example, just as the stops would have provided an opportunity perhaps to check the train for hot boxes. No departure time is shown from Salisbury, indicating the wagons are handed over to the GWR for forwarding via Westbury. Incidentally, a footnote indicates it will call on Wednesdays at stations west of Woking to pick up any cattle traffic for Basingstoke market and on Mondays it stops at Porton if there is any Road Box traffic to be dealt with and at Amesbury Junction when required to put off stores. So, then, not always purely a train of locomotive coal empties.

Amongst the longer-distance traffic in this table is the spasmodic heading ‘Fullerton Motor 1st and 3rd classes only’. The main line junction is Whitchurch and after the call at Hurstbourne these vanish to re-appear in the following table on the long-gone line that went through to Romsey via Stockbridge. Fullerton, the third station down that route, was the terminus for the ‘Motors’ and the junction

A pre-WWI view of Southampton West – later Central – with the main station building and its clock tower seen above the train at the up platform.

Andover Junction photographed on 16th September 1899 with a down freight in the sidings alongside the up loop platform.

for a line from Andover considered the more important of the two and therefore bagging the 'through' services to Southampton. But to find those one has to search forward again, 60-odd pages this time.

Services to the military camp at Bulford merit a separate table. There are two return goods workings daily while Salisbury despatches seven passenger trains and receives eight: two run in either direction to/from Andover. Sunday sees a morning train arrive from both the two main line stations but no other workings at all except a single empty stock train to Salisbury. How much of a problem did this pose to soldiers with a weekend pass returning to base?

At Red Post Junction, west of Andover, the Midland & South Western Junction Railway joined the South Western. A half-a-dozen trains, passenger and freight, worked either way to/from Southampton, about a quarter of the total services. On Sundays the MSWJ ran a goods train to and from Romsey but only a single morning passenger departure, up from Southampton at 8.53, the stock being provided by a 'Saturdays Only' late evening working.

Then comes the Salisbury & Dorset, no longer to Bournemouth West via Fordingbridge and Wimborne but very much alive between Eastleigh and Weymouth. The Lymington and Swanage branches and 'Castleman's Corkscrew' via Ringwood and Wimborne are included as well as the cut-off from that route through Hurn and the later and surviving main line via Sway. Tagged on the end is the branch to Portland. Among surprises there is no mention of Somerset & Dorset line trains, either via Wimborne or Broadstone Junction: they appear in the following Wimborne–Bournemouth West table. Nor are any GWR trains shown (shewn?) between Dorchester Junction and Weymouth, presumably because that stretch of line is Great Western-owned though it seems strange the South Western thinks the GWR only works between Weymouth and Portland!

Down trains Nos.148 and 150 are interesting as they form daily 'Through' workings by other companies. No.148 is headed 'Pass GW & GC' and leaves Eastleigh at 4.40pm, terminating at Bournemouth West at 6.06pm. This reached LSWR metals at Basingstoke at 3.52 (dep. 4.00pm) indicating it travelled via Reading and changed its GWR engine at Basingstoke. The GC part of the ensemble presumably arrived at Reading via Woodford Halse, Banbury, Oxford and Didcot. No.150 is also a joint 'Pass' working but this time by the 'LN&W & GN'. This train, also destined for Bournemouth West with a 6.13pm arrival time, departs Eastleigh at 5.06pm. Its routeing to the LSWR could be replicated today, the London & North Western section arriving at Clapham Junction via Willesden and the West London Line. Its departure time is noted as 3.34pm but there's a footnote that reads "This Train leaves No.1 Platform, Clapham Junction, at 3.25pm, and after attaching GN Coaches will leave East Box at 3.34pm." The departure arrangements, and particularly the specific mention of East box, are such as to suggest there is a shunt move of some nature made here in order to connect the two halves of the train. The Great Northern vehicles would almost certainly have come through Snow Hill to Blackfriars and then over the rather convoluted route to Clapham Junction via Canterbury Road Junction, the Catford Loop, Factory Junction and the Ludgate Line. It is, of course, entirely possible the Tottenham & Hampstead Junction Joint would have seen them on to LNWR metals at Willesden Junction High Level and the West London from there. However, as the Great Northern had been granted running powers over the ex-London, Chatham & Dover Metropolitan Extension in exchange for contributing toward the cost, that route is the much likelier one.

Leaving from the Windsor side the train is noted as running to the main line via East Putney, an indication it was probably relatively lightly loaded. The steep climb up to the Wimbledon line was preceded by a turnout with a 20mph speed restriction at Point Pleasant Junction which precluded a 'run' being taken at the gradient, though records indicate drivers often took a liberal view of such restrictions. There may, of course, have been a banker or pilot provided though the table makes no mention of one.

The return workings are also of interest, particularly of the GN/LNW train which has timing changes early in the timetable's life. Up to and including 10th July it departs Bournemouth West at 10.09am and on arrival at Central at 10.16 is attached to the 8.50 from Weymouth which arrived five minutes ahead of it. The portmanteau assemblage departs at 10.21 and is once more routed via East Putney for the 'through' portion to be detached on the Windsor side of Clapham Junction. However, from 12th July the 'joint' service runs as a separate train, leaving Bournemouth West at 10. 05 and Central at 10.16 and running five minutes earlier throughout. Meanwhile the 8.50 up Weymouth is twelve minutes ahead of it, having omitted previously served stations between Dorchester and Wareham, and does not now need to make the hike round through East Putney. There are no variations for the return GW/GC service which leaves Bournemouth West at 11.20am and runs independently throughout to Basingstoke, arriving at 1.18pm. As the Great Western takes over there no departure time is shown.

The Wimborne–Bournemouth West timetable noted above has Waterloo and Bath as the two starting points. One interesting footnote on the weekdays up direction page reads "These are the only Trains that convey Horses and Carriages for London", two of them in fact, departing Bournemouth at 6.40am and 12.35pm with Waterloo arrivals scheduled at 10.35am and 4.05pm respectively. There appears to be no such arrangement in the opposite direction, or at least none specified. Perhaps there is no restriction to specific trains. The Somerset & Dorset features strongly in this table with some very creditable times noted. The final piece of doubling, the eight miles between Blandford Forum and Corfe Mullen Junction, had only been completed

A view over Fordingbridge looking south: a local train for Salisbury approaches.

FORDINGBRIDGE

The crowd on the platform at Ringwood has anticipated the arrival of this presumably excursion train hauled by an Adams A12 Class 0-4-2.

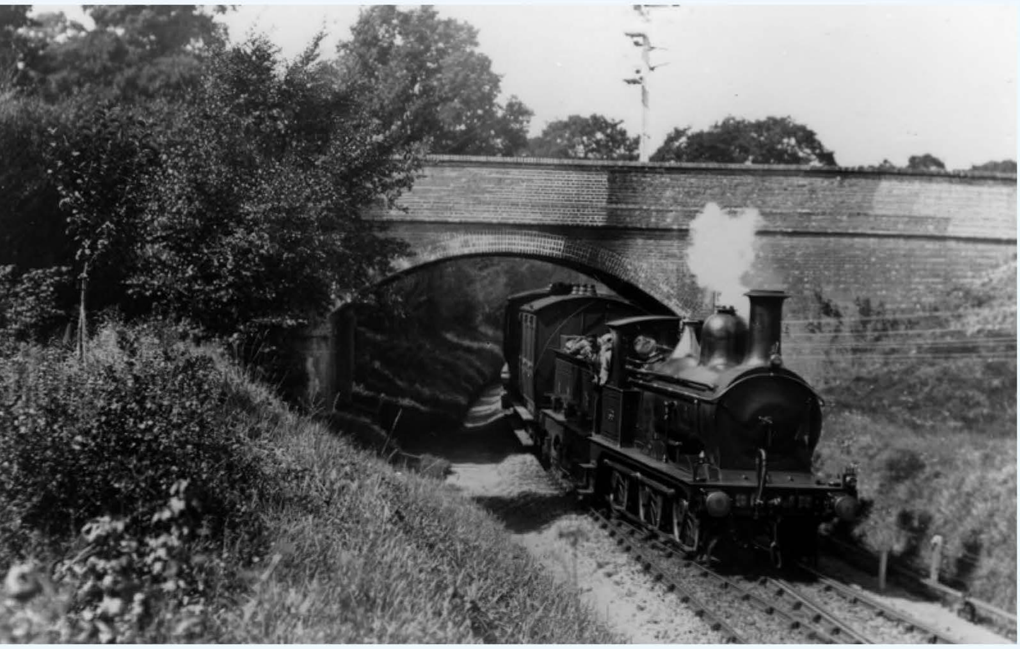
in 1905 but no fewer than 26 miles of the 64 between Bath and Broadstone Junction were still single track and remained so until closure in March 1966. Among the highlights are the 2.13pm from Bath which took only 1hr 53min to get into Bournemouth West, with the 4.04pm not far behind, requiring only five minutes more. Wimborne appears in the timings of a few S&D passenger trains but most now run directly between Corfe Mullen and Broadstone Junction. In the up direction the 8.37am from Bournemouth West matches the best southbound runs with a Bath arrival scheduled at 10.27. However, even at this early stage the S&D did not appear to run on Sundays as a matter of course.

The Somerset & Dorset also features in the next two tables, they being summaries of its freight workings between Bath and Wimborne and of all its trains over that portion of the LSWR's Ringwood line between Wimborne and Wimborne Junction. Three down direction 'through' freights work between Bath and Wimborne though all spend up to an hour at Templecombe, presumably for examination or re-marshalling. The earliest one south of Templecombe runs differently on a Tuesday, being part of the 2.50am off Bath, which thus becomes the 'through' train. However, on other days it forms a portion of the 2.00am down. The up direction table shows only one freight train running to Bath from Wimborne: this spends more than an hour at Templecombe.

More byways follow: Portland's Easton & Church Hope Railway precedes the Bishop's Waltham, a 3¾-mile branch from Botley on the Eastleigh–Fareham line, though dignified by having connections to/from Waterloo shown. Then come Cosham–Havant and the Lee-on-the-Solent Railway off the Gosport branch before several pages covering Southampton–Fareham–Portsmouth, including Gosport and Stokes Bay. Inter-company co-operation here, too, with services from Bristol (dep. Sarum 10.48am and 3.27pm) and Cardiff (dep. Sarum 1.33pm and 7.30pm). The two earlier trains run to Portsmouth Harbour, the later pair terminating at the 'Town' station (now Portsmouth & Southsea). Return workings leave for Cardiff at 8.05am and 5.00pm and for Bristol at 12.20pm and 2.05, in all four cases working out of Portsmouth Town station. One other train inevitably draws today's eye: it departs from Fort Brockhurst at 11.38am and passes Fareham seven minutes later. The column is headed 'Special with Discharged Solders As Required'.

Midland & South Western Junction services appear here and there in the Southampton to Salisbury timetable as, indeed, do those Bristol and Cardiff trains already noted. They appear again, as do MSWJR services, in the several pages of timetable covering the Andover–Southampton via Romsey line obliquely referred to when considering the Fullerton Motor. But after that comes the Portsmouth Direct.

A Somerset & Dorset 0-6-0 is passing Wimborne Loop signal box where the single track SDJR line becomes double for the run into Wimborne. The train will have to reverse at Wimborne to continue its journey to Bournemouth.



The first train leaves Waterloo at 5.20am, making calls at Weybridge, Woking, Guildford and Godalming and all stations thereafter: a note states that a pilot is attached at Guildford to work the 7.20am up from Haslemere. (That is presumably a tank engine or, as there was no turntable at Haslemere, a tender engine required to run in reverse.) The 9.5am down works non-stop over the Guildford New Line from Surbiton and south of Guildford calls only at Haslemere, Fratton and Portsmouth Town, reaching Harbour station at 11.19am. If this seems a rather pedestrian schedule for the 75 miles of route, the competing Brighton with an additional 13½ miles to cover puts it into some context, even accounting for the relative lightness of the London, Brighton & South Coast Railway trains. The late afternoon service from London Bridge, for example, is booked in a very creditable 94 minutes for the difficult 70¾ miles to the first stop at Chichester. Portsmouth Harbour was reached 28 minutes later after calls at Havant, Fratton and Portsmouth Town.

No.26 down is another 'As Required' train, horseboxes running mid-morning between Woking and Petersfield. A footnote shows how much reliance was placed on local officials: "...as arranged by the Agent at Woking who will instruct the Guard and arrange as to the Stations at which the Train shall call". A daily horsebox working with milk vans attached is scheduled between the same two points in the early evening.

Guildford cattle market took place on a Tuesday, a cattle train being scheduled to leave Petersfield at 6.45am, picking up at all stations south of Godalming. It reached Guildford at 8.53. There appears to be no later southward working specified but Guildford despatches a train of cattle at 5.05pm, calling at Woking, Weybridge and all stations to Surbiton to terminate at Wimbledon at 6.55. Whether the animals were destined for fattening or slaughter at these intermediate settlements is not noted.

The 4.50pm up Midhurst–Woking goods, which joins the Portsmouth line at Petersfield, calls at Milford on Petersfield market days to detach cattle if required. The timetable does not specify which day that is.

Havant and Cosham feature again in the next table, a summary which covers the triangle formed by those two points and Portsmouth. Brighton trains between Farlington and Portcreek Junctions are included: this 'Summary' occupies six pages. The Midhurst branch and the East Southsea line from Fratton come next, the latter jointly owned by the South Western and Brighton but worked by one or other of them alternately for five years. (The LSWR had begun this stint on 1st January 1908.)

The following table covers workings on another joint LSWR/LBSCR line, Ryde Pierhead–St. John's Road on the Isle of Wight. The first train is the 3.30am Mail worked by the Isle of Wight Railway seven days a week. The table is headed 'Ryde Pier Railway' though the section over water represents only about a quarter of the total distance.

A summary of Guildford–Peasmarsh Junction trains – ten pages of it! – comes next, covering the workings by all three Southern companies over this busy 1¾ miles of track. There follows that group of lines between Guildford, Aldershot and Farnham: the South Eastern & Chatham Railway Reading–Redhill line trains feature strongly. There are then two pages for the Ascot–Aldershot–Farnham route with Waterloo figuring also. No.4 down, the 7.00am from Waterloo, is interesting on two counts. Firstly, there is a stern warning at the foot of the page: "This Train will not convey Horses or Carriages to or from any Station". Secondly, it is a Waterloo–Waterloo anti-clockwise circular, using the now lifted chord between Frimley Junction and Sturt Lane Junction. Standing at Woking for eleven minutes, it departs at 9.09 having had the 6.45am from Southampton coupled to it. The ensemble gets to Waterloo at 9.47am calling only at Vauxhall. This method of working figures throughout the day, the 8.00am, for example, picking up a Portsmouth train at Woking and also making a dash for the capital with a similar interruption at Vauxhall. It is practised clockwise, too, the 2.28pm down shedding a Guildford portion at Woking and the 4.12pm being the trailing part of a Gosport train that traverses the Meon Valley line. The division takes place at Woking at 4.47pm.

Returning to what we think of now as outer suburbia, the routes to Leatherhead and Guildford, what astonishes is the relative paucity of traffic by today's standards. The first up train leaves Leatherhead at 5.08am but the next is not until 7.17. At the height of what is today's rush hour Leatherhead despatches trains to Waterloo at 7.52, 8.16 (ex-Bookham), 8.36, 8.54 (ex-Guildford) and 9.27 (ex-Horsley). (At the time of writing no fewer than eleven trains leave Leatherhead for Waterloo between 05.23 and 09.39: Southern timetables seven to Victoria in the same period.) The evening rush hour is similar with Waterloo departures for Leatherhead at 4.30, 5.25 (not Saturdays), 5.28 (slow from Wimbledon), 5.59, 6.32, another slower one at 6.34 and then a 34-minute wait if you miss that.

The table for the Joint line between Epsom and Leatherhead holds no surprises except that no ultimate destination is shown for any of the trains. Only LSWR down services have their departure times at Leatherhead noted: there were separate stations here until the Southern rationalised the layout in July 1927 and all traffic then used the ex-LBSCR station.

Staff and passengers pose for the photographer at Cosham: the view is east from the footbridge.

The Windsor group follows and here there are some surprises: for one the tables are not specified as either 'Down' or 'Up'. In the ostensibly 'down' direction table, which has Waterloo at the head, the up direction Woking–Byfleet Junction section is shown as a preliminary to Addlestone Junction/ Weybridge–Staines [Junction]. The down Windsor branch times are beneath that but only from the long-closed Staines High Street station. Thereafter the up direction continues through Ashford, Feltham and the Hounslow Loop to Brentford. Freight trains to/from the northern companies paused here, possibly for inspection and perhaps also for crew changes. Some marshalling took place at Brentford sidings though the North Western did most of this for the South Western – expensively! – at Willesden. Brentford sidings' importance diminished as Feltham Yard opened in stages from October 1920. The timetable route then continues to Old Kew Junction where the North & South Western Junction Railway is joined to and through Acton Wells Junction for access to the marshalling yards at Neasden and Brent as well as Willesden.

Hounslow looking towards Feltham Junction c1912. The size of the goods shed will be noted, an indication of spreading urbanisation.

There are naturally some interesting goods traffic workings here, though, as in earlier tables, many such trains do not figure on every day of the week. A 2.30am departure from Woking is headed '1.15am Goods Guildford, not Mondays': arrival at Willesden is timed at 4.05am. However, on Mondays it starts from Woking at the usual 2.30am and runs as a cattle train which "Will stop at Byfleet, Chertsey, Staines Junction, Feltham and Hounslow when required to take on Cattle for Maiden Lane". That was close to the large and important Metropolitan Meat Market opened off the Caledonian Road by the City Corporation in 1855. This service also runs as a cattle train on Sundays though it departs Guildford at 1.30am, the timings from Woking being exactly as for the Monday train though there seems to be no pick-up from intermediate stations en route.

The daily 9.26am goods from Woking spends half an hour at Staines before proceeding to Brentford, spending twenty minutes at Feltham on the way. After an hour at Brentford it departs for Willesden at 12.30pm but a footnote explains the reason for the stopover: "Wagons and Road Box Traffic by this Train for Twickenham, Richmond, Teddington, Kingston, and Stations on the Shepperton Line must be taken to Brentford and sent from the latter Station by the 1.37pm Goods, Brentford to Richmond."

Another goods working leaves Woking right on the tail of the Willesden train but is to a slower schedule and stands at Chertsey for 25 minutes before continuing. This is destined for Reading, taking the now-lifted south to west curve at Virginia Water. Willesden features most commonly as the northern destination but Brent receives trains, almost all noted as 'Empty Wagons' emanating from Woking, Wimbledon and Guildford. One assumes these have been gathered from stations in their vicinity for despatch from Brent to the East Midland coalfields for domestic fuels. Brent is also the destination for the 1.00pm Goods from Eastleigh which spends 30 minutes at Woking before continuing. The enginemen are relieved at Feltham according to a footnote though only a passing time is recorded at the station. After 1½ hours at Brentford and a five-minute stop at Kew East Junction the train gets to Brent at 7.02pm.

It is not only inter-company traffic that appears here for the 8.20pm Basingstoke–Nine Elms Goods passes this way with the usual stops at Staines and Brentford, though it does not apparently call at Woking. The remainder of its journey into London is in the timetable book for the Metropolitan District. Sunday naturally sees fewer trains but Salisbury features then, despatching a goods at 2.00am. This departs Woking at 5.20 and, after the usual call at Brentford, gets to Willesden at 7.17am.

Southbound workings also rouse some interest, not least No.30, the 11.52am Willesden to Southampton as it attracts no fewer than three separate footnotes. Instruction 'D' reads "Stops at Hounslow on Mondays, when required, to take on Gunpowder for Southampton: and at Staines Junction, when necessary, to attach Cattle Traffic for Guernsey". One hopes the cattle were safely separated from the explosives! Footnote 'F' states "The load of this Train may be made up to 50 Vehicles at Brentford, including 20 Wagons of Coal or other heavy Minerals". Finally, according to instruction 'G', "Stops at Woking for examination only". The 9.18pm Willesden–Southampton Goods also calls at Woking for examination but this train also has a specific instruction, that it "Stops at Staines Junction to detach perishable Traffic only, for Windsor and Reading Lines". (As an aside, there is sometimes quite anomalous use of capital letters to lend weight to specific words in these instructions – see 'Traffic' here for example – a practice, incidentally, not confined to working timetables around this period.)

Finally in this section come four quite short timetables, the first being the Waterloo 'Roundabout' services. However, here there is a hint of regular departures, though still some quite large gaps between trains. Late afternoon anti-clockwise departures leave Waterloo at 4.15 (after a 1½-hour gap!), 4.57, 5.18, 5.57, 6.18 and 6.35 – hardly a rush-hour service – and the next departure is not until 7.30. The clockwise service is similarly bunched though the 4.52 departure is preceded by a 1½-hour gap, others following at 5.10, 5.35 fast to Norbiton (SX), 5.38, 6.10, 6.52 and 7.20 and after that at 8.35. A regular interval hourly service is provided in both directions on Sunday.

The Brighton holds the upper hand on the Ludgate Hill–Wimbledon line though confined to the section west of Tulse Hill: both routes from Tooting to Wimbledon – via Haydons Road and via Merton Abbey – are included. Passenger traffic was withdrawn from the latter in 1929 though freight continued for many years more. (One of the factories regularly receiving and despatching goods belonged to Lines Brothers, the makers of Triang toys.) Snow Hill is the starting point in this table. The South Western had been among contributors to the cost of the Chatham's Metropolitan Extension and it also had running powers over the Brighton line between Tulse Hill and the Joint line at Streatham South Junction. Most trains are confined to the section but 'through' evening services to Kingston leave Ludgate Hill at 8.27 and 11.38. The second of these comes into Wimbledon via Merton Park, a reversal for its onward journey thus being required. Sunday sees workings to Kingston at 9.47am, 1.42pm, 7.32 and 10.30 with an additional one in June at 4.35pm: this becomes a 4.25 departure from 4th July. All these start from St. Paul's. There does not appear to be any up train from Kingston to Snow Hill on weekdays but a matching five on Sundays, at 8.30am, 12.30pm, 2.33, 5.50 and 8.54, all terminating at St. Paul's. A summary of all trains over the two-and-a-bit miles of shared line between Tulse Hill and Streatham South Box follows.

This District's Timetables are completed by a comprehensive compilation of trains over the West London Extension Line. Only departure and passing times are shown and letters in the headings, 'S', 'B' and 'NW', identify which company is running which train. A footnote makes clear that South Western trains terminate at Clapham Junction's Platforms 1 and 2 while the Brighton and North Western companies' trains use the Brighton side of the station, presently Platforms 16 and 17 but No.9 at that time. One would have thought any signalman working Latchmere Junction box would have learned that very early in his training. (At that time, rather than numbering individual faces a single platform number was confusingly allocated to each of the nine island platforms making up the station.)

Apropos the rift between Herbert Walker and Henry Holmes: at the age of 49 Holmes had confidently expected to succeed Sir Charles Owens as the South Western's General Manager and could not hide his resentment when the board went outside the confines of Waterloo. Walker, a London & North Western man, had worked for G. P. Neele and Robert Turnbull, both exceptionally able traffic officers. He took up office in January 1912, keen to revive the fortunes of the inner suburban services which were failing due to increasing road competition. He had experience of regular headway working and saw this as the way forward, especially when allied to frequency. Pressing on with the idea, in July 1912 Walker appointed Sir Alexander Kennedy as the South Western's electrification consultant. Walker met Holmes shortly afterwards and asked him to kindly produce some draft regular interval timetables for the Kingston Roundabout service. In due course Holmes reported that regular headway working was impossible on the South Western, however much it might be practised on less busy railways. Walker's simple response was to transfer the timetable office out of Holmes's department and into a new section under his direct control.

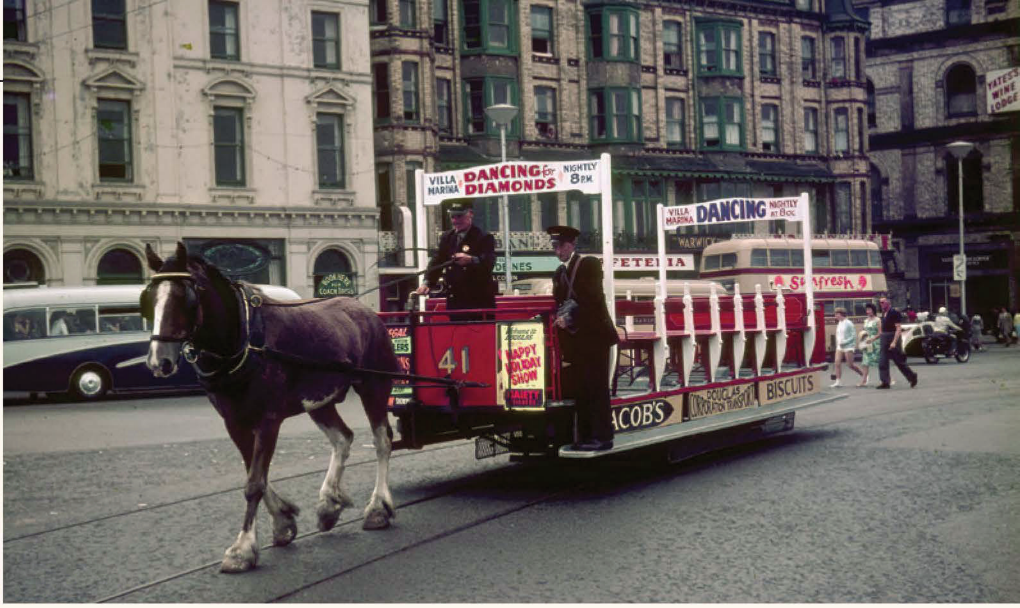
As unforgiveable from Holmes's point of view, Walker had early made a habit of touring the railway almost as an everyday passenger, becoming determined to tighten up the operation because of some of the lax practices he found. Within a year the whole operation was de-centralised, District boundaries being rearranged and their operational centres moved to more logical locations. District Superintendents acquired greater control and, in view of the increased responsibility, an assistant personally selected by Walker from among the brighter young men on Holmes's staff. Holmes and his department were left with little other than responsibility for dealing with the results of accidents and setting fares and goods rates. Holmes's sense of injustice led to his decision to retire in 1916 at the early age of 53 years. It may be significant that no apparent effort was made to get him to stay.

Walker had no illusions about the problems in getting his new passenger timetable plans to fruition. It took four years for the 'mathematical timetable' to be brought completely into operation and the haphazard, maybe even bizarre, 1909 efforts by Holmes and his predecessors put firmly in the past. But I still find them extraordinarily interesting and entertaining!

Sources

Apart from the source volume I have also made some use of the following: *Jowett's Railway Atlas of Great Britain and Ireland, History of the Southern Railway* (Dendy Marshall), *Sir Herbert Walker's Southern Railway* (Charles Klapper), *The South Western Railway* (Hamilton Ellis), *The London & South Western Railway* (O. S. Nock), *Railways of the Southern Region* (Geoffrey Body), *British Railway History 1830-1876* (Hamilton Ellis), *Lines Around Wimbledon* (Vic Mitchell & Keith Smith), *Rail Centres, Clapham Junction* (J. N. Faulkner), *The West London Joint Railways* (J. B. Atkinson), *The London & North Western Railway* (O. S. Nock), *The Somerset & Dorset Railway* (Robin Atthill), *Railway Track Diagrams No.5, Southern & TfL* (ed Gerald Jacobs), *Atlas of the Southern Railway* (Richard Harman and Gerry Nichols) and LBSCR Table of Distances January 1901.

Brentford at the turn of the century with a down train approaching. The platform canopies are very typical of the LSWR and can still be seen here and there, at Cobham & Stoke D'Abernon for example. (all Lens of Sutton Collection)



Day One of Geoff and Margaret Sheldon's Manx holiday was Friday 2nd August and having arrived from Liverpool, they immediately took a trip on the horse tram to Derby Castle. In this view open 'toast-rack' car No.41 is approaching the Victoria Pier terminus. It bears the legend Douglas Corporation Transport and two similarly lettered motor buses are on Loch Promenade in the background with the neoclassical Peveril Hotel (since demolished) to the left. Newer areas of road surfacing bear witness to a realignment that had occurred two years earlier when the tracks were slewed to terminate nearer the sea wall to permit construction of the new modernist Sea Terminal. The horse tram fleet numbered 31 vehicles in 1963, but over the last half century many have been scrapped or sold and the current total is thirteen. This example was one of a pair supplied by G. C. Milnes, Voss & Co. of Birkenhead in 1905. They were bought specifically for a short-distance shuttle service transporting steamer passengers between Victoria Pier and Victoria Street – at the latter place transfer to the cable cars of the Upper Douglas Tramway took them into the interior of the town.

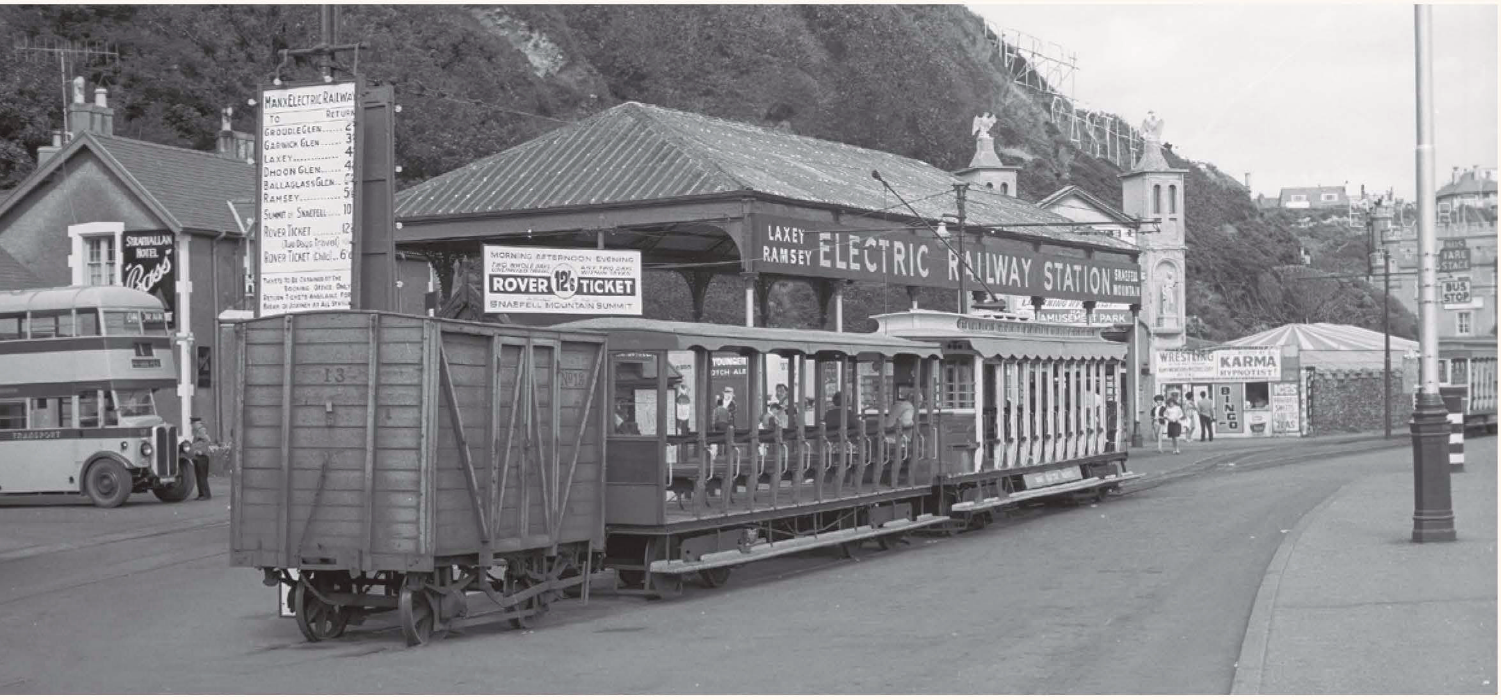
A MANX ODYSSEY IN 1

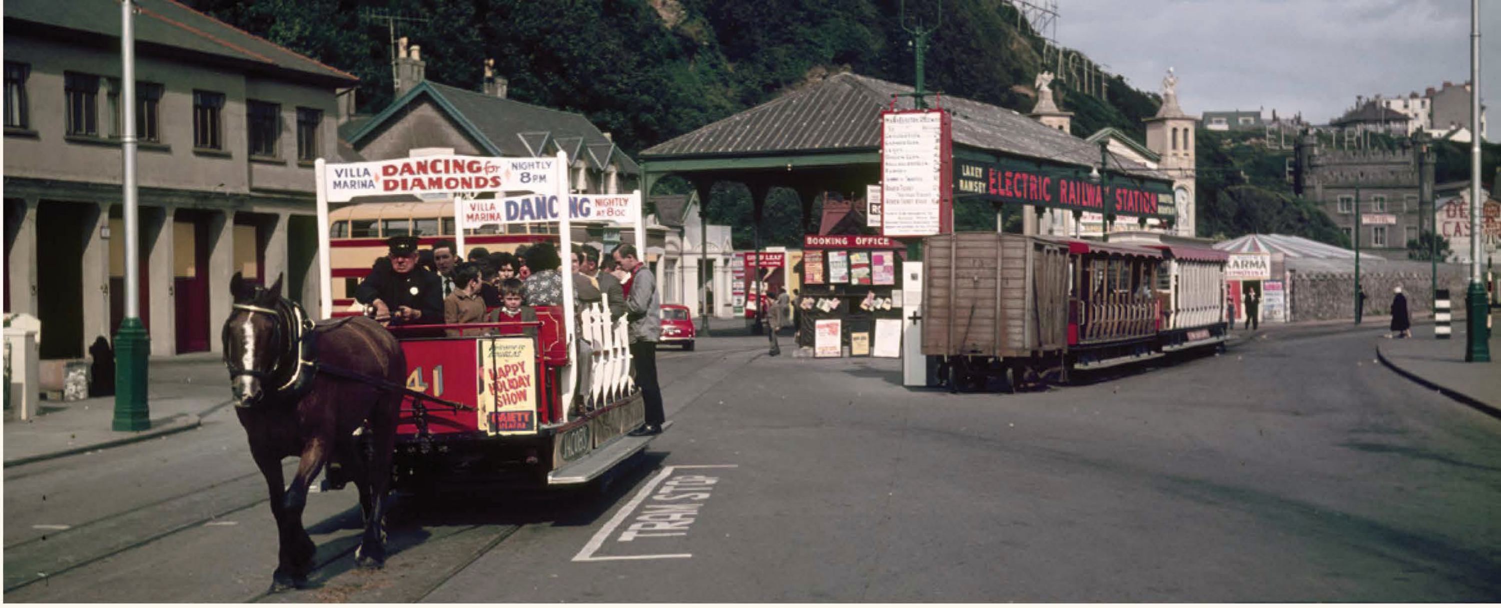
Photographs by **GEOFF SHELDON** • Text by **MARK HIGGINSON**

In Parts One and Two of 'A Manx Odyssey' (September and October 2024), chronicling Geoff Sheldon's 1963 exploration of the Isle of Man, the focus was on the steam-operated Isle of Man Railway. In this final instalment we look at the other lines then in operation on the island: the Douglas Bay Tramway, the Manx Electric Railway, the Snaefell Mountain Railway, and the Queen's Pier Tramway at Ramsey. A truly eclectic mix for so small a territory and largely still with us today.

Nevertheless, a visit in earlier years would have found even more to see, including the standard gauge Douglas Southern Electric Tramway (1896-1939), whose open-top tramcars negotiated a hair-raising clifftop route from Douglas Head to Port Soderick (with funiculars at either end), the 3ft gauge Upper Douglas Tramway (1896-1929), a cable-hauled street system connecting the upper and lower parts of Douglas, and the steam-operated Groudle Glen Railway, a short 2ft gauge pleasure line scenically located on the coast north of Douglas. While the other lines remain long defunct, the GGR had only ceased operations the year before Geoff's visit and in this case the ultimate outcome was a happier one. While enduring

A closer view of the Manx Electric Railway tram, trailer and van seen in the previous picture with Douglas Corporation AEC Regal No.47 of 1937 vintage to the left. It is late afternoon and the presence of van No.13 is a reminder that the MER handled goods, parcels, luggage and mail traffic as well as passengers and in 1912 could muster a fleet of 29 non-passenger vehicles plus an electric locomotive for haulage. Larger commodities included livestock, flour, milk and quarried stone. Remarkably, although such traffic declined from the 1920s, it did not cease finally until 1997. From the outset extensive use of the railway was made by the Post Office both for bagged mail from Douglas to Ramsey and for collections from lineside boxes, the latter being undertaken by the conductors. In 1963 this was still the case (continuing until 1975). Some of the infrastructure at Derby Castle is visible, including the 'Great Canopy' covering the horse tramway tracks but it was eventually dismantled as unsafe in 1980. The twin-towered entrance to the entertainment complex is also apparent (complete with advertisements for bingo, wrestling and a hypnotist) but the end for this long-standing attraction was fast approaching, the site being cleared for redevelopment in 1965. In due course the ill-fated Summerland indoor leisure centre rose in its place. Of vast and brutalist design, it would suffer a catastrophic fire in 1973 involving major loss of life and although rebuilt on a smaller scale, that lesser version was itself demolished in 2006, leaving a derelict site. Today Derby Castle looks somewhat diminished compared with former times.




VILLA MARINA DANCING to DIAMONDS NIGHTLY 8PM
VILLA MARINA DANCING NIGHTLY at 8

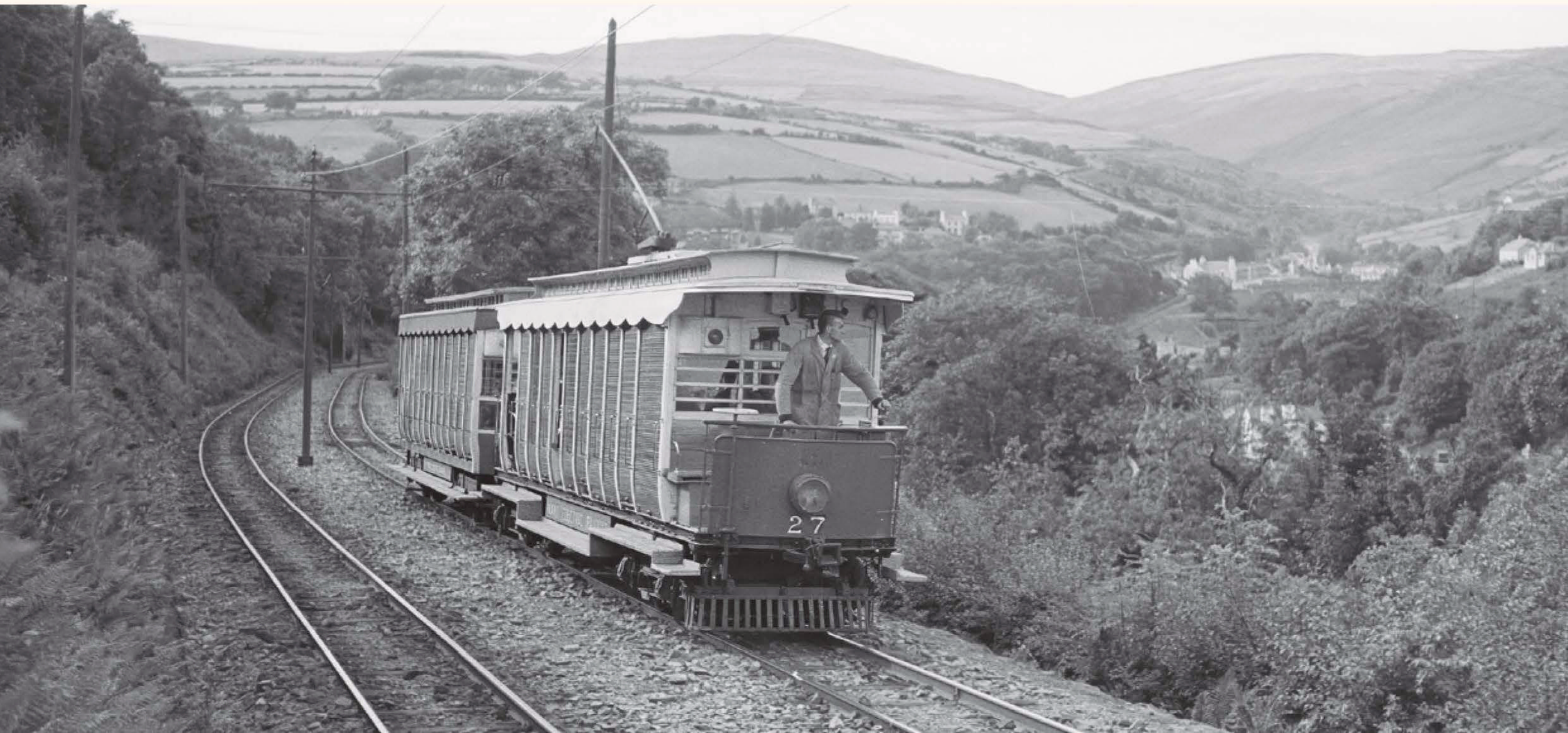
a further twenty years of desuetude, since the 1980s a herculean effort by volunteers has seen it faithfully recreated.

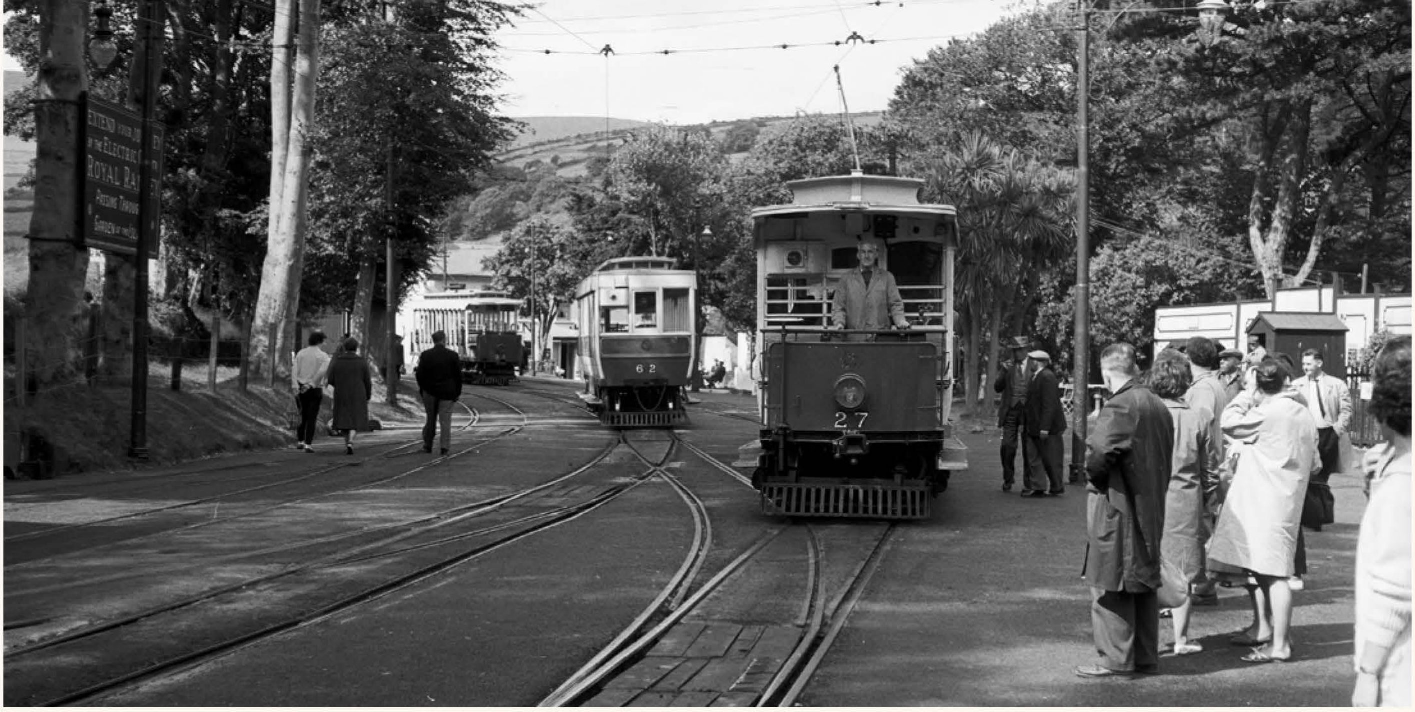
Starting in Douglas, the island's capital, and working our way up the coast, the 3ft gauge Douglas Bay Tramway claims our attention first. Always horse-worked, it was promoted by Thomas Lightfoot (1814-93), a Sheffield civil engineering contractor, who relocated to the Isle of Man around 1870. This was a period when Douglas was undergoing rapid development as a resort with the gradual creation of a continuous promenade along the seafront, flanked by imposing many-storeyed hotels. Building a passenger tramway to carry the increasing number of visitors became a necessity and a 1½-mile route from near Derby Castle to the Victoria Pier opened in 1876-77. Initially single track with passing loops, it was later doubled, by which time there were 36 tramcars and 68 horses on the books.

Several changes in ownership culminated in the tramway being acquired by Douglas Corporation in 1902 who (as Douglas Borough Council) continued to operate it until 2016 when it was nationalised, becoming part of the Department of Infrastructure's Isle of Man Railways Division and thus entering the same fold as the steam railway, Manx Electric and Snaefell lines. Styled today as the Douglas Bay Horse Tramway, in the present century it has had to weather many vicissitudes, including reduced passenger numbers, rising costs, traffic congestion

ABOVE: **Four days later we are at Derby Castle, the northern end of the horse tramway and the interchange with the Manx Electric Railway. No.41 is again in evidence and is now well-loaded with passengers for the return to Victoria Pier. To the right a MER tram, trailer and van await departure on the much longer journey northwards to Laxey and Ramsey. Giant illuminated letters reading 'DERBY CASTLE' and 'ELECTRIC RAILWAY' can be discerned on the cliffs in the background, while Derby Castle itself sits below. This faux Gothic tower was originally constructed for the owner of Strathallan Lodge, which is the dormered building immediately behind No.41. The Lodge duly became the Strathallan Hotel and since 1982 has been the Terminus Tavern. From the 1870s the Castle expanded into the first of Douglas's major entertainment centres with the addition of a pavilion for music, dancing and varieties. These developments prompted a 200yd extension of the horse tramway from its original Derby Castle terminus at the foot of Summer Hill to the gates of the new complex. The 1896 car shed is on the left, sporting a second storey added in 1935 for office accommodation. In 2020 the old depot was replaced by a new single storey one with a frontage stylishly imitating the 1896 original.**

The MER is often regarded as a tramway but is better described as an inter-urban electric railway, something exemplified by this view on Wednesday 14th August of Douglas-bound car No.27 and trailer climbing away from Laxey near South Cape. The rugged topography of the east coast is evident and that is Snaefell, its highest peak, rising above the tram. One of nine 56-seat crossbench cars ordered from G. F. Milnes in 1898 for the extension to Ramsey and originally numbered 14-22, only the first five entered service as powered cars, the other four being used as motorless trailers and quickly renumbered 40-43 in that series. Not many years passed before it was decided to motorise them and this occurred in 1903, whereupon they were again renumbered as 24-27, their original numbers having in the meantime been reused. Other modifications included the fitting of roller shutters – here seen to be closed indicating an inclement day – and stepped footboards. No.27 remained in passenger traffic until 1986, then becoming a maintenance car, but has now been stored out of use for over twenty years.





Of the MER's three major stations, Laxey – the midpoint between Douglas and Ramsey and the interchange with the Snaefell Mountain Railway – has the most pleasant setting. Occupying a generous site on the west side of the valley above the Laxey River, it is bowered by trees and features rusticated timber buildings set well back from the tracks. It came into being in 1898 with the extension to Ramsey and was Laxey's fifth station in the space of four years; prior to that both the MER and the Snaefell line had from their respective openings each used two successive termini. These were located well to the south and north of the present establishment, which involved passengers in a quarter-mile walk to connect. In this scene, taken on 6th August, the station buildings are off to the right. On the left the furthest track belongs to the SMR, its slightly wider gauge detectable, while a sign exhorts passengers to extend their journey to 'Royal Ramsey' passing through the 'Garden of the Island'. Three tramcars are in view. The ubiquitous No.27 is bound for Douglas, while in the background is trailer No.62 and motor No.32. Both were products of the United Electric Car Co. of Preston in 1906 and normally worked together. They remain in service down to the present, still as a pair.

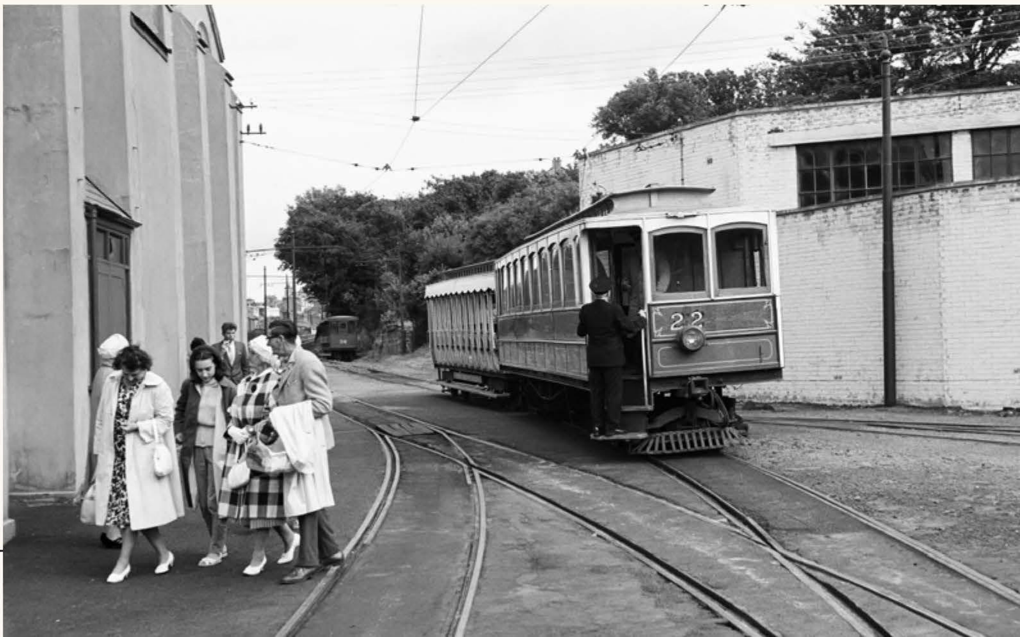
and its incorporation into a £20.7 million redevelopment of the promenade. The latter resulted in a three-year suspension of services and when reopened in 2022 the line ran no further than Villa Marina, some way short of the previous southern terminus at the Sea Terminal (Victoria Pier). However, a new alignment has been created over this stretch and it is hoped the tramway can be reinstated to its full length in due course – acquisition by the Manx Government has certainly facilitated some welcome investment.

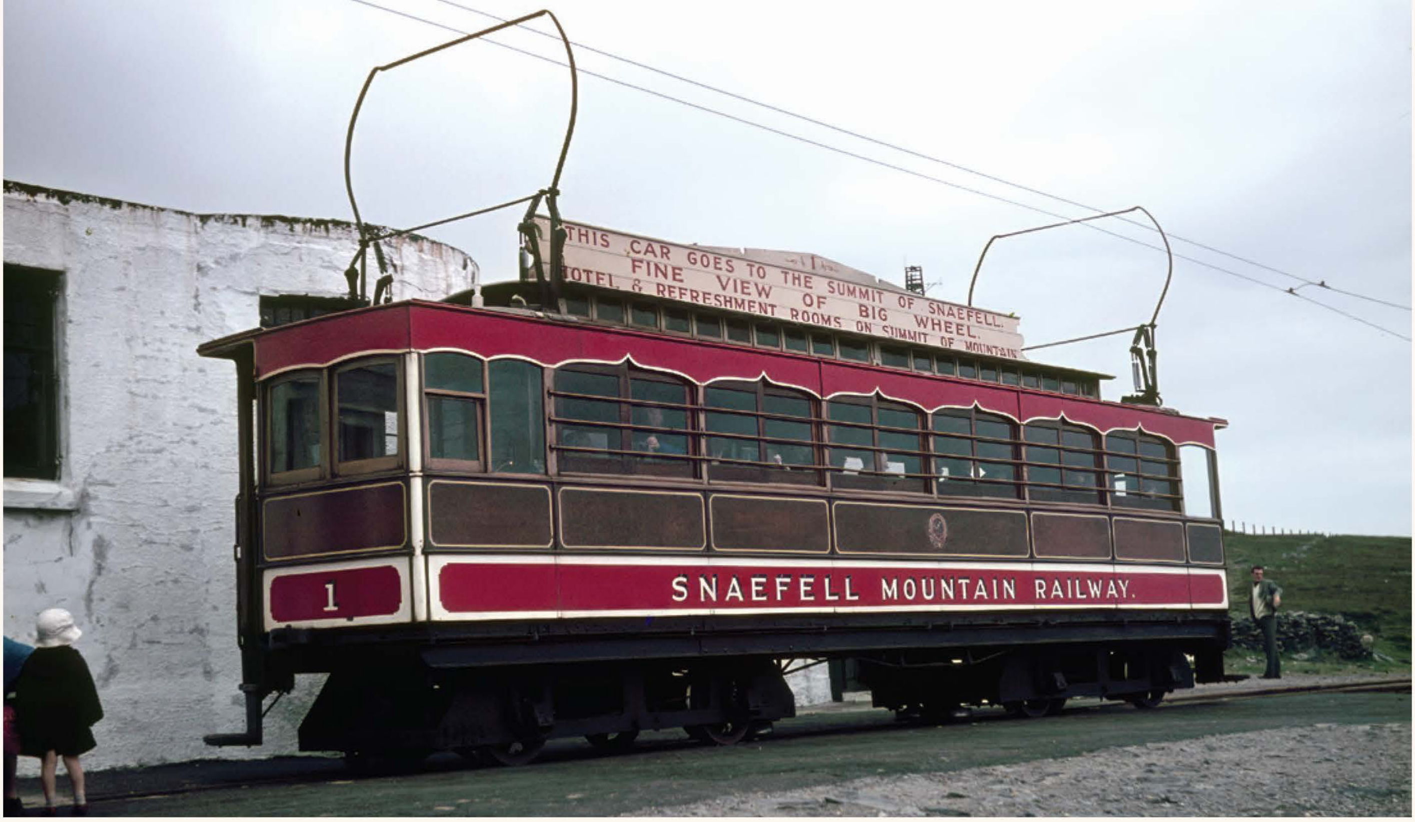
At Derby Castle on the north side of Douglas, the horse tramway interfaces with the 3ft gauge Manx Electric Railway, a line whose early years were complicated. It originated, after several attempts to promote a conventional railway from Douglas up the coast to Ramsey, as a 2¼-mile roadside line from Derby Castle to Groudle. This opened in 1893 and was part of plans by the Douglas Bay Estate Company to develop the adjacent Howstrake estate. Given an unavoidable steep climb to a 258ft summit, electric traction was adopted.

The leading light was banker and local worthy Alexander Bruce (1843-1900) and even before the tramway to Groudle was completed, he had the idea of using it as a testing ground for a 4¾-mile extension to the coastal village of Laxey, a centre for metal mining, fishing and weaving. A new entity, the Douglas & Laxey Coast Electric Tramway Company, was duly formed and the extended line was brought into use in 1894. By then the D&LCETC, which had already taken over the Derby Castle–Groudle section, had become the Isle of Man Tramways & Electric Power Co Ltd., a concern with big ambitions. Thus, it purchased the horse tramway which it planned to electrify and extend to the Isle of Man Railway's terminus, although due to opposition this did not go ahead. More successful was a public electric supply to Douglas, construction of the Upper Douglas cable tramway and acquisition of the Snaefell Mountain Railway. In 1896 the company's four lines carried 2.4 million passengers and paid dividends of between 6 and 8½ per cent.

The next development was a continuation of the tramway from Laxey to Ramsey for which an Act of Tynwald was obtained in 1897. Nominally, it was a separate

And so to 'Royal Ramsey', the MER's northern terminus, thus prefixed after regal visits to the town in 1847 and 1902. In the latter year King Edward VII and Queen Alexandra reached Ramsey from Douglas via the not long completed MER, although they disembarked at Walpole Drive, close to the Queen's Pier. By the early 1960s Ramsey station was unprepossessing, comprising a large tarmacadamed yard flanked by the rear elevations of terraced houses and other buildings, although in earlier times ornamental planting had made it more fetching. A new chalet-style station building was completed in 1964 and later the site was opened up by the demolition of the former concert hall. On Sunday 11th August smartly attired holidaymakers make their way across the station precincts, Geoff and Margaret having arrived from the intermediate stop at Cornaa aboard 'Winter Saloon' No.22. No.22, now empty, has reversed and is about to run round its trailer – the station master is in conference with the motorman. This tram was the last of four fully glazed vehicles built by G. F. Milnes in 1899, all of which remain in service today.




THIS CAR GOES TO THE SUMMIT OF SNAEFELL.
FINE VIEW OF BIG WHEEL.
OTEL & REFRESHMENT ROOMS ON SUMMIT OF MOUNTAIN
1
SNAEFELL MOUNTAIN RAILWAY.

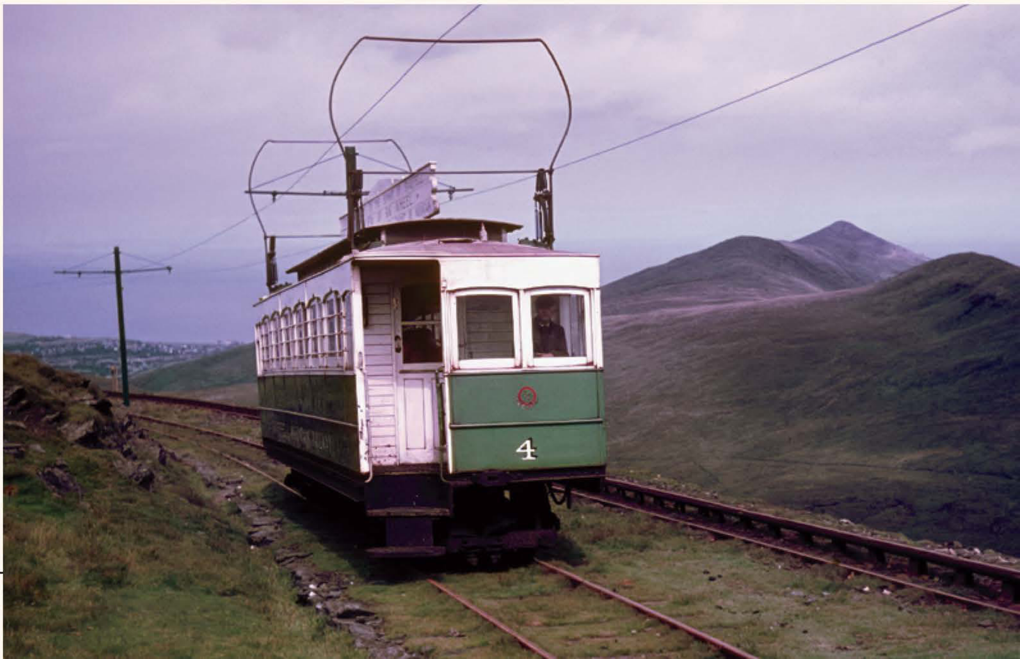
On 6th August, having reached Laxey from Douglas via a stop-off at Groudle Glen, a trip was then had on the Snaefell line and tram No.1 is depicted in cloudy conditions at the Summit station. The six identical passenger cars supplied to the SMR in 1895 by G. F. Milnes could each seat 48 passengers. Unlike their MER cousins they featured rigid bow collectors instead of trolley poles and originally the side windows had canvas blinds rather than glazing, which made for a draughty ride and was soon rectified, although clerestories for compensatory ventilation had to be added shortly afterwards. From 1900 the roofs were adorned with large knifeboard promotional signs. External varnished wood panelling was a characteristic from the beginning with ivory or Prussian Blue used for the remainder until red and white (standard with the MER) became the norm, a colour scheme displayed by No.1. To the rear the grim edifice is the Summit Hotel, erected in 1906 and originally castellated with a round tower. By 1949 the tower had been truncated and the crenelations removed, and then in 1982 the building was gutted by fire. Since rebuilt, it currently looks a lot more respectable. Of the six trams, five remain, No.3 having been destroyed when it ran away (fortunately empty) from the Summit in 2016 and derailed.

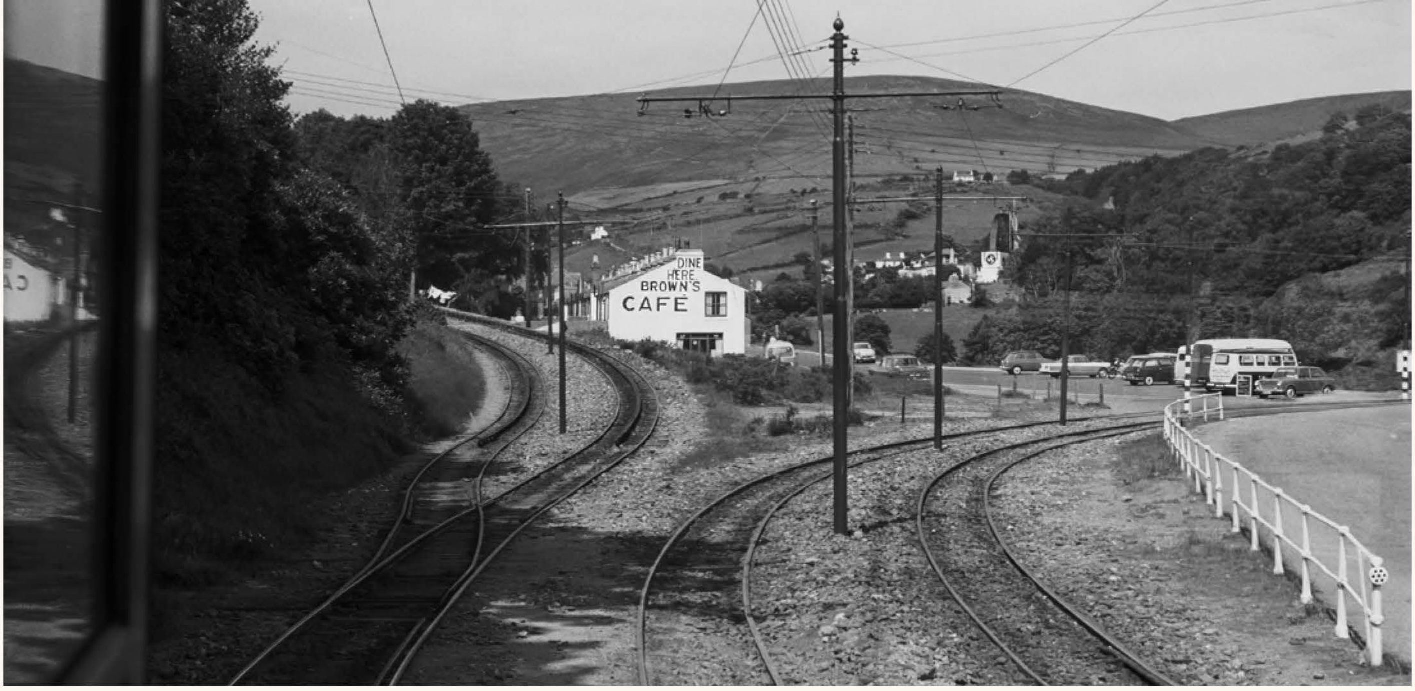
undertaking, but the IoMT&EPC undertook construction. The route continued up the seaboard and opened as far as a temporary terminus at Ballure on the outskirts of Ramsey in 1898. This foreshortening was partly down to the fact that Ballure Glen had to be spanned by one of the tramway's major engineering features, a truss girder structure, and partly because there was uncertainty over the location of the permanent terminus in the town. Originally, it was to be near the Queen's Pier, some distance from the Market Place and harbour, but eventually a more central site was agreed and the final one-mile length opened in 1899, the mileage from Douglas totalling seventeen, all double track.

Unfortunately, the foundations of the owning company turned out to be built on sand. Dumbell's Bank, run by Bruce, had over-extended and in 1900 it collapsed, taking the IoMT&EPC with it. Liquidation saw assets sold off, the horse and cable tramways passing to Douglas Corporation and the electric tramway being acquired by a 'Manchester Syndicate' and then sold on and incorporated as the Manx Electric Railway Company in 1902.

Matters stabilised until 1930, which proved to be a bad year. A fire at Laxey car shed destroyed eleven trams and then the

The SMR's route occupies a shelf cut into the mountainside and unlike on the MER right-hand running obtains. This is apparent as car No.4 approaches Summit station in a view looking north east, the final section of the railway spiralling round the mountain top to give spectacular views across the island. North Barrule, second only to Snaefell in height (1,854ft), is the peak in the background, with Ramsey and Ramsey Bay in the distance. The summer of 1963 was a poor one and the overcast weather has done nothing to enhance the drab green and white livery carried by this car. Introduced following nationalisation in 1957, these colours were disliked and only fourteen trams were so treated before a reversion to the traditional scheme was made. In fact, No.4 was one of the last to be so adorned and was repainted for the 1964 season. The raised and horizontally laid Fell centre rail is apparent on the downhill track but that nearest is devoid as it was deemed unnecessary where the gradient eased at the SMR's three stations. While not used for traction, beneath each car there were horizontal guide wheels that ran along either side of the rail and a calliper brake that was clamped to the railhead when descending. Around the time the trams were re-motored, rheostatic brakes were fitted, roof-mounting of the equipment being facilitated by removal of the advertising boards after the 1970 season. In the 21st century each car has four braking systems: the wheel brakes, the Fell brake (emergency only), the rheostatic brakes and most recently fail-safe magnetic track brakes.





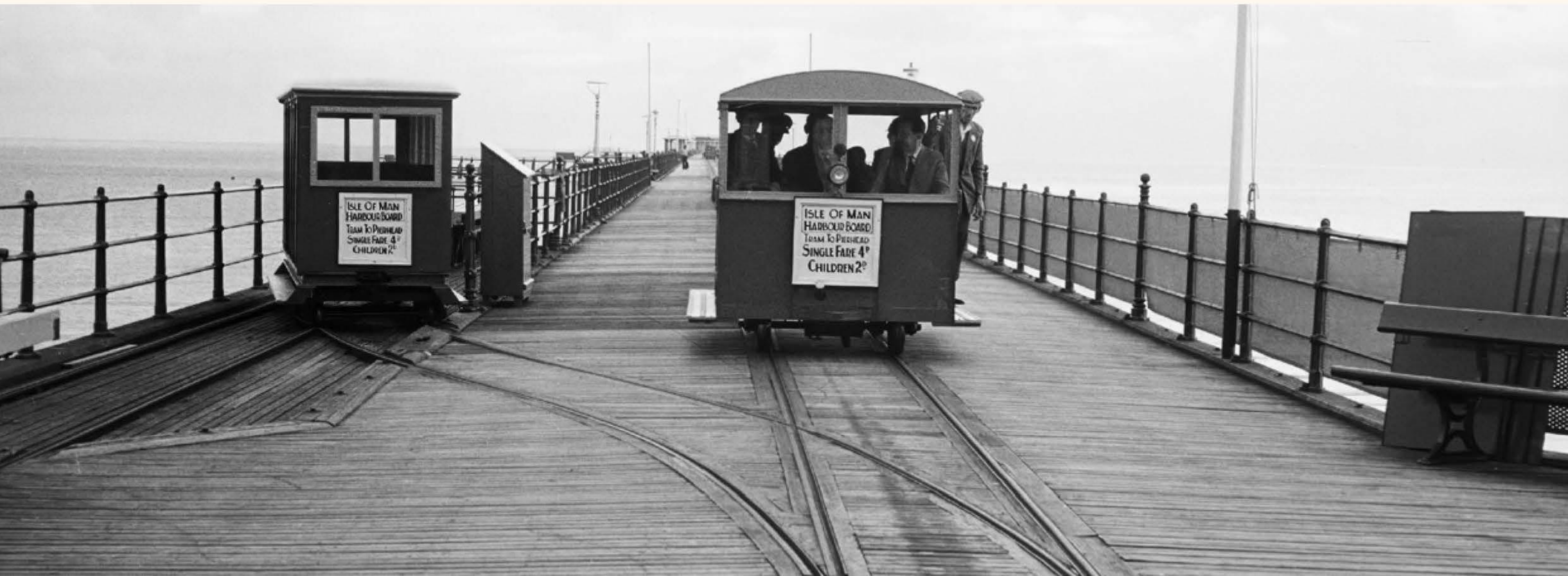
Geoff and Margaret's trip up Snaefell included lunch in the hotel and then a walk for photographic purposes alongside the track to Bungalow. From there a tram took them back down to Laxey, by which time the sun had come out. This view, taken from the descending car as it nears the end of its journey, shows the convergence of the SMR and MER – the commencement of the Fell rail can be seen straight ahead with the Ramsey route curving away to the right. In-between, the white-painted Brown's Café was a long-lived Laxey institution occupying the first two houses in Dumbell's Row, a terrace of former miners' cottages; first opened in 1906, it lasted until 2022. In the right distance the village's most notable landmark – Lady Isabella, at 72ft 6in in diameter, the largest working waterwheel in the world – can be discerned. Dating from 1854, it drained the Great Laxey Mines from which lead, copper, silver and zinc were extracted until closure in 1929. Like the SMR the wheel has always been a major tourist attraction.

company was held liable for causing major flooding in the village. However, passenger figures continued to rise until the late 1940s but thereafter mounting losses resulted in the prospect of closure in 1956. At this point Tynwald stepped in and the following year bought the operation at scrap value, considering the tramway too vital to the tourist trade to lose.

The MER was the first of the island's railways to be nationalised but since 1957 it has not all been plain sailing. The Laxey–Ramsey section almost immediately came under threat and no services ran over it in 1975-77, something that became an issue in the 1976 General Election. However, despite some uncertainties, today the entire route remains in operation with 48 intermediate stopping points. Fifteen of the 32 original passenger motor cars remain in service or under restoration (a further nine are stored), together with 21 (plus two stored) of the 36 trailer cars. Considerable sums have been spent over the last half century on track renewals, tramcar refurbishment and depot buildings. Services currently operate from March to November.

As well as being the most important intermediate station on the MER, Laxey is also the junction for the Snaefell Mountain Railway, which can lay claim to being Britain's first mountain railway. Around 4¾ miles in length, it climbs to the summit of Snaefell, the island's highest mountain (2,037ft), from where it is said, on a good day, seven kingdoms can be seen – the Isle of Man, England, Scotland, Wales, Heaven and Manannán (the sea). The line was an immediate success.

Compared with the MER its origins were straightforward. A line to take tourists up the mountain had been surveyed in 1887-88 by George Noble Fell (1849-1924). This would have been steam-worked and equipped with the Fell centre-rail system originated by his father John Barraclough Fell (1815-1902) and used successfully in France/Italy, Brazil and New Zealand. It did not proceed but the idea resurfaced some years later promoted by the Snaefell Mountain Railway Association, a private grouping that included Fell and the



On the Queen's Pier at Ramsey the Isle of Man Harbour Commissioners' Wickham railcar is getting close to dry land with a reasonable payload, a steamer having not long departed the pierhead. A long way to the rear, the Hibberd 'Planet' 4wPM is propelling two of the luggage wagons towards the camera. The Wickham (Works No.5763 of 1947), powered by a Ford V8 engine, had arrived in 1950 and could seat eleven passengers, whereas the 'Planet' had been delivered new in 1937 (Works No.2027) along with the fifteen-seat bogie coach stabled on the left. The date is Tuesday 13th August and just over a month earlier this pairing had enjoyed its finest hour, being used to transport Queen Elizabeth, The Queen Mother, when she arrived aboard HMY *Britannia*. Following closure of the railway in 1981, the Wickham was dismantled but the 'Planet' (which had been given 'steam outline' bodywork late in its career) and its carriage were removed for preservation. In 2024 the combination operated a passenger service over part of its old haunt for the first time in 43 years.

While the Sheldons' attempt to ride on the Groudle Glen Railway on Tuesday 6th August was thwarted by *Polar Bear's* indisposition, a visit was made the following day, which was very wet. The highpoint of tourism development on the island was in the 1890s and that decade brought about no fewer than six new railways or tramways, the GGR being one of these, opening in 1896. A mere three quarters of a mile long, it was purely for pleasure, linking Lhen Coan at the head of the Glen to a terminus on the coast at Sea Lion Rocks where there was a refreshment room and zoo. The zoo, created by damming a rocky inlet, housed sea lions and polar bears, hence the names carried by the line's locomotives. Unlike most of the other island railways, the GGR was of 2ft gauge and was really a miniaturised version of a narrow gauge line, in fact quite the epitome of the late Victorian 'toy railway'. At Lhen Coan Margaret Sheldon gives some idea of *Polar Bear's* diminutive size – the 'rather loudly decorated' 2-4-0T (Bagnall 1781/1906) had been left outside the engine shed following its failed boiler inspection but its lately applied red, blue and yellow livery at least provided a splash of colour amid the dripping greenery. Its companion *Sea Lion* (Bagnall 1484/1896), a similar but even smaller machine, was derelict behind the shed, having last worked in 1939. A third 2-4-0T, of identical design to *Polar Bear* but newly built, was added to the stud of locomotives at the 'new' GGR in 2019 and given the name *Brown Bear*.

ever present Alexander Bruce. Fell's existing survey was adopted for the double track route and no enabling Act was required as Bruce and the Association bought the necessary land privately. Progress was swift and construction was effected in only seven months, the railway opening in August 1895. Besides the termini at Laxey and Snaefell Summit, there was one intermediate station – prosaically named Bungalow – where the line crossed the mountain road from Douglas to Ramsey.

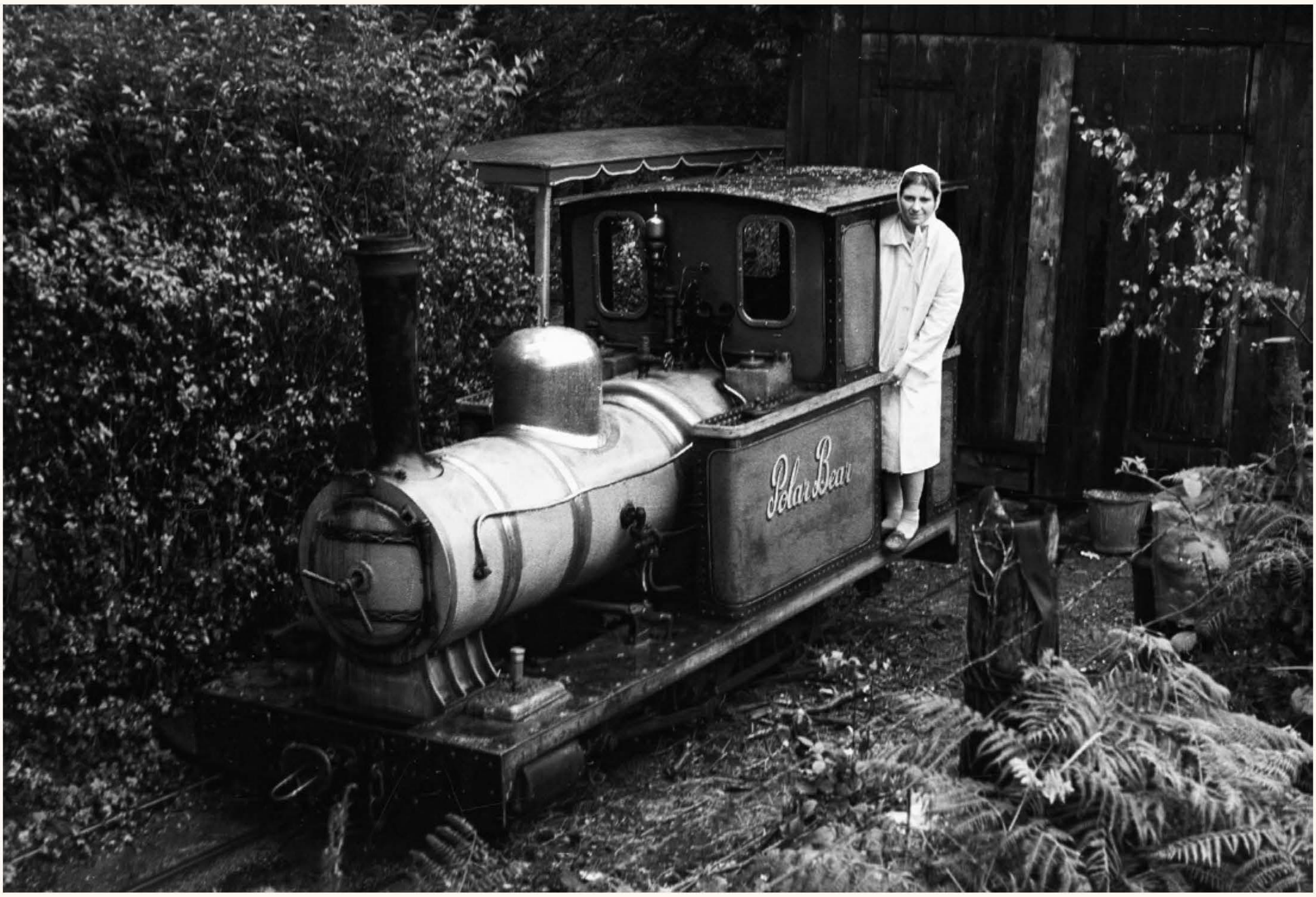
Electric traction was adopted rather than steam and six passenger trams were provided plus a coal car to serve the lineside power station located halfway up the mountain. The gauge was 3ft 6in, wider than the MER, the extra inches providing room for the Fell centre rail and helping to stabilise the cars given the windy nature of the route. In the event the centre rail was found to be not needed for adhesion purposes, the trams being powerful enough to tackle the steep gradients, most of the 1,820ft climb being at 1 in 12. It was still required, though, to steady the cars and for braking.

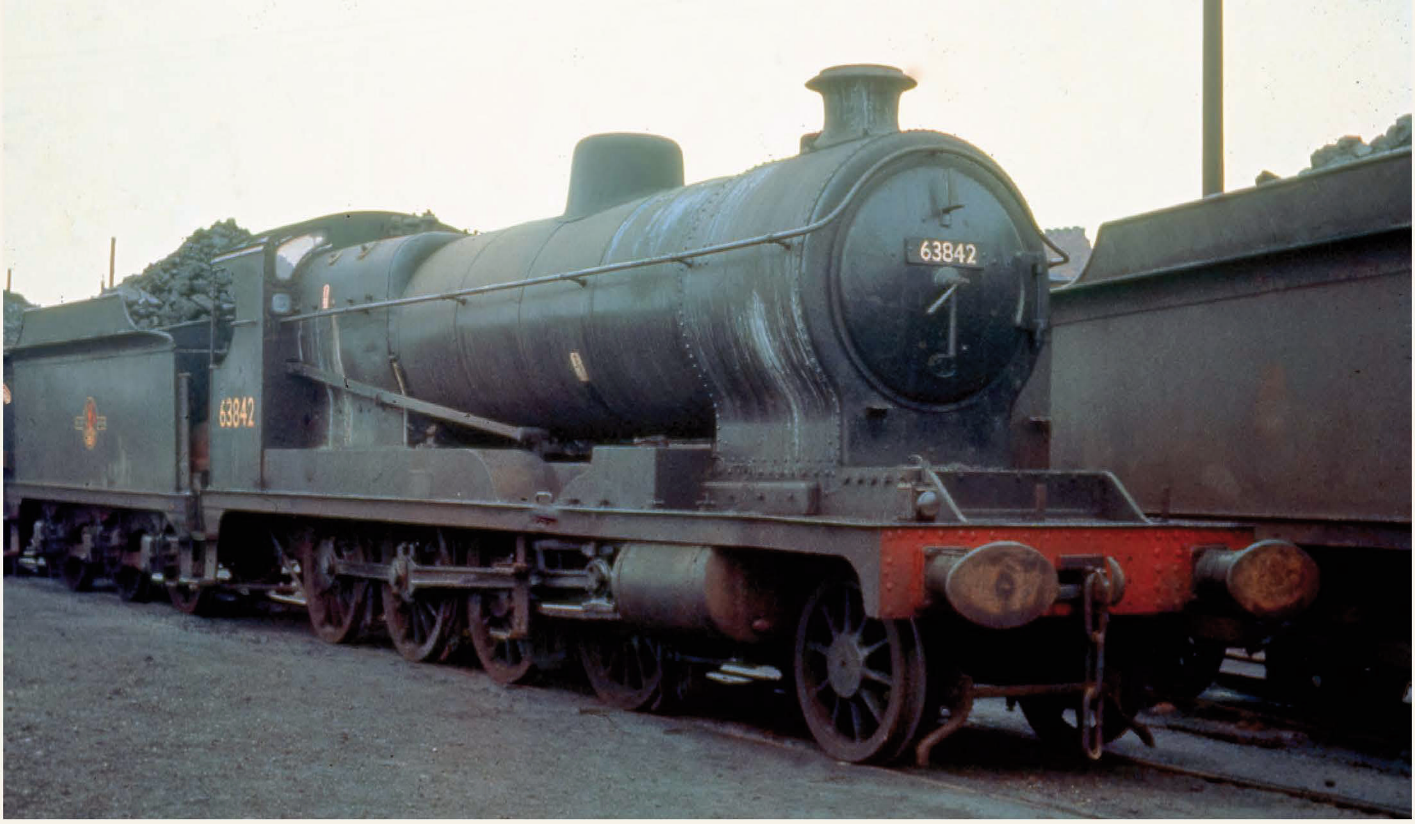
Shortly after completion the Association sold the line to the IoMT&EPC (as Bruce had always planned) at no little profit. Following the collapse of that concern it passed to the MER in 1902 and thence to the Manx Government in 1957. Today, while the electrical system and the tramcars have been updated, the line's character remains the same as when it first opened 130 years ago.

Lastly, we come to a much more modest line – the railway that ran the length of Queen's Pier at Ramsey. Although again of 3ft gauge it was an isolated operation owned by the Isle of Man Harbour Commissioners and intended to transport passengers and their luggage to and from the steamers which called at a landing stage attached to the pierhead. The pier is 720 yards in length and was designed by the noted harbour engineer Sir John Coode (1816-92), the ironwork coming from Head, Wrightson & Co of Stockton-on-Tees. It was brought into use in 1885 but the railway, although intended from the start, did not appear until about 1896. The track layout was very simple and by 1963 consisted of a single line running the length of the structure with a siding at the pier entrance for rolling stock storage, a passing loop at the midpoint and a split into two roads at the pierhead.

Rolling stock consisted of flat wagons for luggage (plus one for heavier items) and a covered passenger car of 1899, all of which were manually propelled. In 1937 these were augmented by a Hibberd 'Planet' type 4wPM locomotive and a bogie 'toast-rack' coach, followed by a Wickham railcar in 1950.

Both the pier and railway were well-maintained into the 1970s but usage declined, particularly after the last steamer called in 1970. It then became the sole preserve of promenaders and anglers but costly repairs became due and the railway ceased operation in 1981, although it was left *in situ*. The pier itself closed ten years later following vandalism and the loss of the pierhead buildings through fire. Since then there has been an indefatigable volunteer-led campaign to restore both the pier and railway which has accelerated since 2017 with the result that 2021 saw public access reinstated, albeit only over a short distance from the pier entrance. The plan is to reopen the remainder of the structure in stages as resources allow.





Class O4/3 2-8-0 No.63842 at Langwith Junction shed April 1961. The O4/3 were ROD engines built with steam brake only and no water scoop. This locomotive was built for the War Department in February 1919 by the North British Locomotive Co., Glasgow, and taken into LNER stock in February 1924. It was withdrawn from Langwith Junction, its base from July 1950 to April 1965, and scrapped at Cashmore's Great Bridge. (Author's Collection)

THE ROBINSON GREAT CENTRAL R (LNER O4) 2-8-0 FREIGHT LOCOM

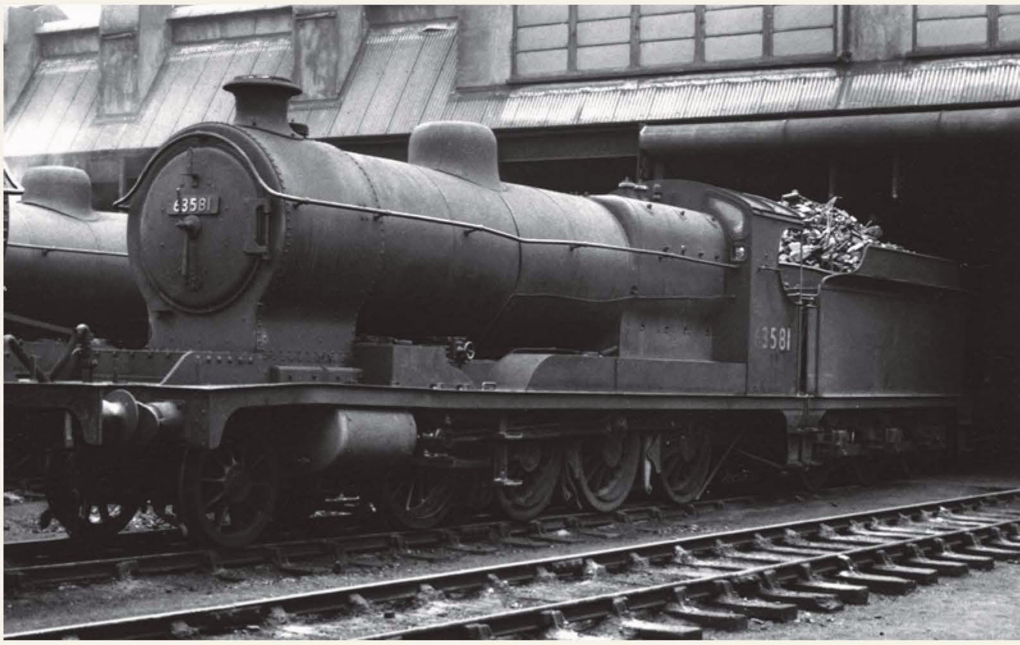
Background

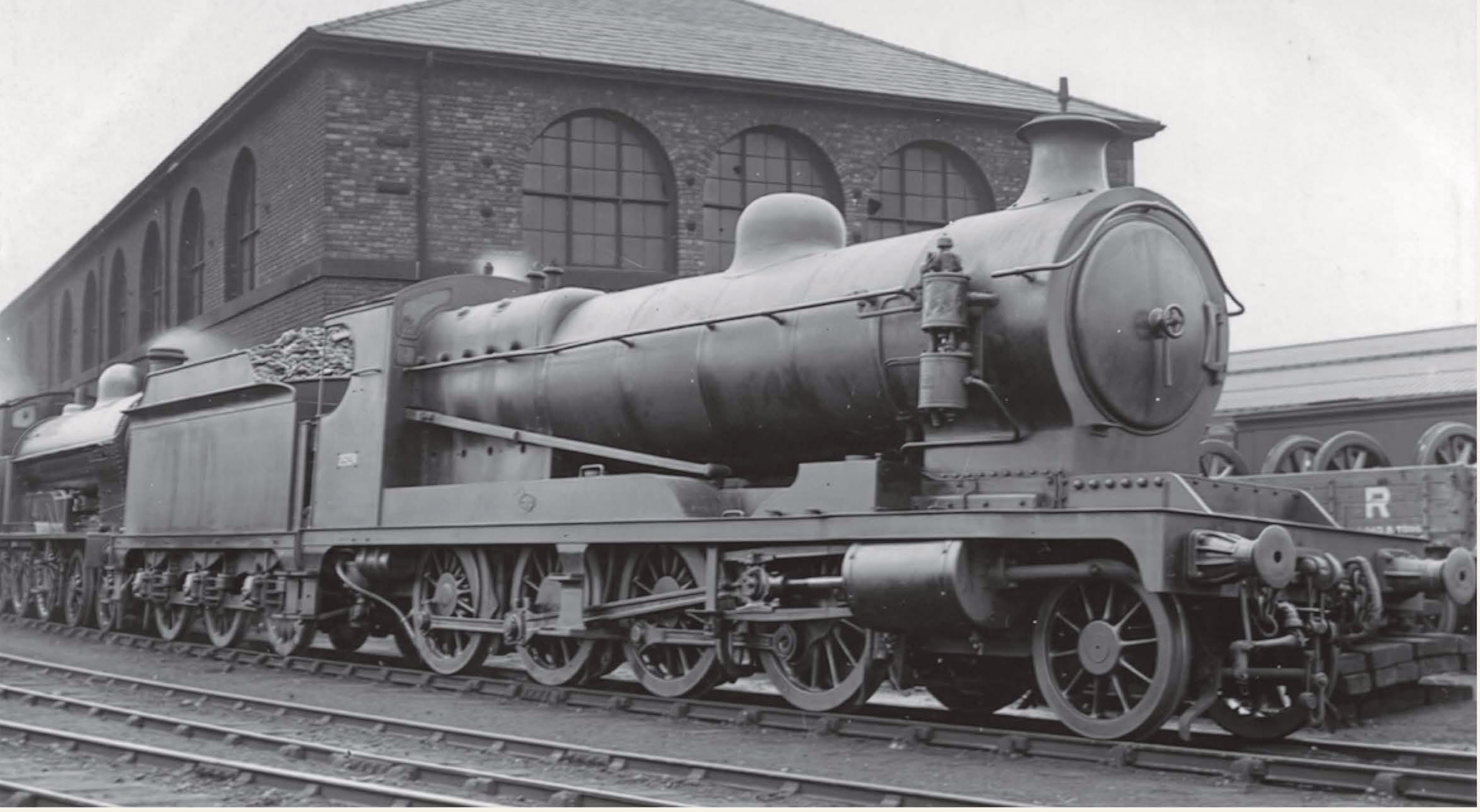
John George Robinson, born in Newcastle upon Tyne on 30th July 1856, the second son of Matthew Robinson, a locomotive engineer, joined the Great Western Railway (GWR) in 1872 as an engineering apprentice at Swindon under the guidance of Joseph Armstrong who was at that time the company's Locomotive, Carriage and Wagon Superintendent. In 1878 he moved to Bristol to work under his father. Robinson Junior left the GWR in 1884 and took up the position of an Assistant Locomotive, Carriage and Wagon Superintendent in Ireland at the Waterford & Limerick Railway (W&LR). The W&LR became the Waterford, Limerick & Western Railway (WLMR) in 1896 and Robinson was promoted to Locomotive Carriage and Wagon Superintendent shortly after that. He is credited during his sixteen years in Ireland with responsibility for the design of many 0-6-0, 2-4-0, 2-4-2T, 0-4-4T and 4-4-2T locomotives. Some of his 0-6-0s look remarkably like his later Great Central Railway 9J (LNER J11) 'Pom Poms'. But I am jumping ahead. He left Ireland in 1900 to become Locomotive and Marine Superintendent of the Great Central Railway (GCR) – remember the GCR had significant maritime interests. Robinson then became the GCR's Chief Mechanical Engineer. He remained in that post until he retired at the end of 1922 when the Great Central was grouped into the London & North Eastern Railway (LNER) having declined the post of Chief Mechanical Engineer of the LNER.

While employed by the GCR Robinson designed many classes of goods, express goods, heavy goods, passenger, express passenger, suburban, dock, shunting and mixed traffic locomotives. He is well known for his Class 11B (LNER Class D9) 4-4-0, of which 40 were built between 1901 and 1904, the last not being withdrawn by British Railways (BR) until 1950, the larger Class 11E (LNER D10) 'Director' Class 4-4-0 locomotive, which was used on GCR express trains between London Marylebone, Nottingham Victoria, Sheffield Victoria and Manchester London Road and for the 'Improved Director' GCR Class 11F (LNER Class D11) 4-4-0 locomotives. In all fairness I would have to say that not all his locomotive designs were a great success – for instance, it is often stated that his GCR Class 1 (LNER B2 – later B19) 'Sam Fay' 4-6-0s had problems in service which led to their relegation from express passenger use (although in fairness the GCR categorised these as mixed traffic engines).

Robinson was made a Commander of the Order of the British Empire (CBE) in 1920. He died on 7th December 1943.

Class O4/1 2-8-0 No.63581, in original condition looking slightly the worse for wear but coaled up and ready to go. This locomotive was built by North British Locomotive Co., Glasgow, in November 1912. Allocated throughout its career to Gorton, Staveley GC, Sheffield Neepsend and Sheffield Darnall from where it was withdrawn in February 1959 and sent forthwith to Gorton for scrapping. (Author's Collection)





LNWR Class MM 2-8-0 No.2824 at Carlisle Upperby. The LNWR bought 30 of these ex-ROD Robinson designed GCR 8Ks after the First World War. This locomotive shows clearly its new chimney, dome, safety valves and whistle but the most visible difference is the Westinghouse brake pump mounted on the driver's side of the smokebox and air tanks beneath the cab. It retains its ROD tender.
(John Alsop Collection)

AILWAY CLASS 8K
OTIVE

BY BRUCE LAWS

Concept and basic design

The 8K was designed as an enlarged and upgraded version of the 8A (LNER Q4 0-8-0s) which had by now shown itself to be an effective, tough and simple design. The new locomotives needed to have a better hauling ability to cope with the Great Central's expected increase of freight and mineral traffic to its new Port of Immingham which was to be opened in 1912 and which was expected to foster significant export trade in coal and other materials. In due course traffic to Immingham was indeed on a massive scale and included coal, pig iron, iron ore, wood pulp, timber, pit props, grain and other products. Imports included wool from Australia for the West Riding of Yorkshire.

In August 1910 an order was placed for twenty 8K locomotives. The first GCR 8K (LNER O4/1 Class) locomotive (No.966) was erected in September 1911. It featured a superheated GCR No.6 standard boiler of comparable size to that used on the Great Central's Class B5 4-6-0s, Class C4 and Class C5 4-4-2 Atlantics and Class S1 0-8-4T locomotives. This was mounted on a main frame machined from 1¼ inch steel massively braced. Intended for operation at 200psi, the boiler was in fact worked at 180psi. The boiler was fitted with a Belpaire firebox. It was built with Robinson's new eighteen-element superheater, introduced a few months earlier on an A5 Class 4-6-2T. This superheater was based on the Schmidt design and was fitted to eight further 8Ks. Four of the initial 8Ks were constructed with a 24-element version of the Robinson superheater. This latter 24-element superheater became the standard for new 8Ks, although in 1916 it was decided to use 22 elements. Frequently 24-element superheaters were converted by the expedient of blanking off two elements, although some were not changed until a boiler replacement was necessary. The eighteen-element Schmidt superheaters were all replaced by 1923. The bigger boiler was matched with an increase in cylinder diameter from 19in to 21in. The slide valves of the Q4 were changed for piston valves of 10in diameter, located between the frames. The engines ran on 4ft 8in diameter driving wheels. A leading pony truck was fitted to take the extra weight. Their tenders carried six tons of coal and 4,000 gallons of water. Tractive effort was 24,93lbf. As well as receiving numerous design elements from the Q4s, the 8Ks also inherited the nickname 'Tinies' from the 0-8-0s.

Great Central Railway 8Ks

The new locomotives quickly proved a great success and the Great Central Railway had built 126 of them in six batches by 1914. Early allocations of the 8Ks were to Gorton, Mexborough, Annesley, Retford, Staveley, Sheffield and Immingham. Mexborough had the biggest allocation, and would continue to do so until 1939. Sheds along the GCR's London Extension did not get any 8Ks until 1914, when Neasden received three to haul coal trains from Annesley to London. Mexborough 8Ks handled the bulk of the coal traffic over the Woodhead Route.

War service (First World War)

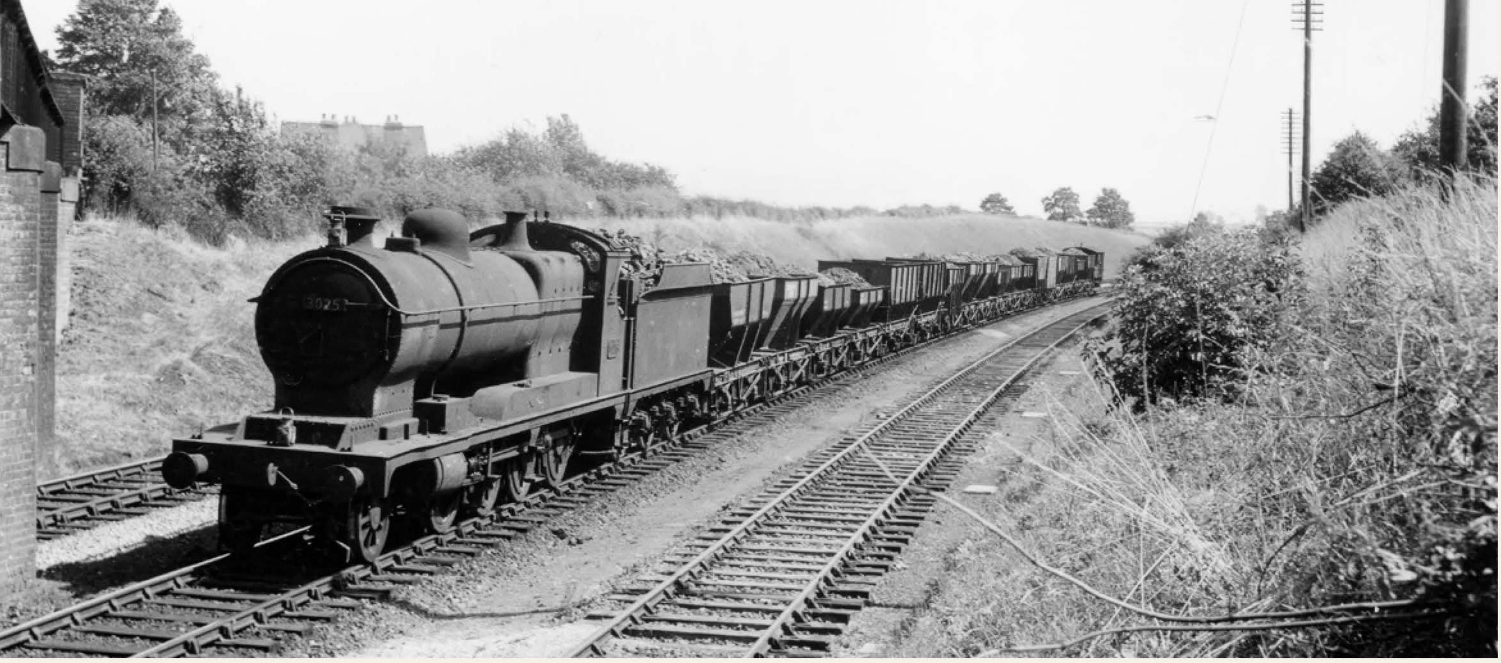
In order to cope with wartime rail transport requirements, the British Army's Corps of Royal Engineers formed its own Railway Operating Division (ROD) which commenced operations in Continental Europe in February 1916. The ROD originally envisioned using French and Belgian locomotives, but these countries consciously reserved their locomotives away from the Front. British locomotives were swiftly drafted and initial loans encompassed an assortment of engines from Britain's railways. It was quickly determined that standardisation was necessary. Robust and straightforward, the Class 8K 2-8-0 steamed well and proved exceptionally dependable, qualities that commended the design to the Ministry Munitions. Sir Sam Fay (General Manager of the Great Central Railway and a member of the Government's Railway Executive and later Director General of Movements and Railways with a seat on the Army Council) ensured that the Ministry and the ROD selected the GCR's 8K design as its standard heavy freight engine. Orders for 325 locomotives were placed in February 1917. These orders were followed by orders for 196 more in 1918 to cushion British industry from the negative impact of the post-war run-down in military manufacturing. Locomotives built for the Ministry and the ROD were essentially to the same design as the GCR's 8K, differing only in minor details, such as the fitting of Westinghouse air brakes and the use of steel for the boiler tubes and inner firebox. The North British Locomotive Company of Glasgow built 369 of the Government ordered locomotives, 82 were built by Robert Stephenson & Co. of Newcastle, 32 by Nasmyth Wilson & Co. in the Patricroft area of Salford, another 32 by Kitson of Leeds and six were built at the GCR's Gorton works.

Of the initial order for 325 locomotives, 311 were shipped to France for war service. They were mainly used to haul military supply and troop trains, plus some services for civilians.

Post war: ROD locomotives

After the Armistice of 11th November 1918 numerous locomotives returned from France to the UK in 1919 and 1920. One ROD 2-8-0 duty that continued until the latter year was a through troop train from Cologne to Calais.

After the war British railway companies had a backlog of locomotives which needed



GWR’ ROD’ Class 2-8-0 No.3025 climbing Hatton bank unassisted with a down Class H goods train, showing clearly the ‘Swindonisation’ of the Robinson O4 including Swindon-style top feed and brass safety valve housings. This Robert Stephenson built engine was withdrawn from Pontypool Road (86G) in July 1954. (Mike Boakes)

overhaul and repair. While they did their best to attend to this 498 ROD 2-8-0s were loaned to nine railway companies between 1919 and 1921 to cover goods traffic. The ROD 2-8-0s were then put into storage around the country until they were disposed of. These locomotives were generally in good condition, but were fitted with steel inner fireboxes that proved to have short lives. In June 1919 the GCR purchased three of these 2-8-0s that it had itself built as ROD Nos.2005-07. It enquired about the potential purchase of more, but the price was more than the company was prepared to pay.

Further GCR and LNER developments and purchases

World War I had led to an increase in the cost of coal and a decline in the quality available. In the light of this Robinson became attracted to the potential to use coal dust which also offered the promise of total combustion. Four 8Ks were used for pulverised fuel experiments between 1917 and 1924. The coal dust was gravity-fed into rotating feed screws at the bottom of the fuel container. There, the fuel met a blast of air from a fan attached to the front of the tender. The resultant gaseous combination was fed through pipes to enter the back of the firebox via two 7½in diameter holes in the foundation ring. The grate and ashpan were replaced with firebrick. The fans were fed by a De Laval steam turbine. The feed screws were originally powered by a four-cylinder petrol engine, but this was later changed to a small steam engine. The whole procedure required an external source of steam to start a cold engine. Coal dust was usually recovered from colliery screens and then dried over the flues of Lancashire boilers. Early difficulties included getting the correct mixture of dust and air. Problems with firebox size and design were also experienced. Colloidal fuel (dust/oil mixture) was also tried, but trials showed little benefit beyond a higher superheat temperature. Wartime conditions meant that investments in fuel preparation were limited and generally the trials were not a success.

Also during World War I the 8K was developed into the Class 8M (LNER 05) by fitting a larger 5ft 6in boiler. This boiler was essentially a shortened version of the boiler used on the GCR B2 ‘Sir Sam Fay’ Class of 4-6-0s with a 28-element superheater fitted. Two batches of ten were ordered, although these did not enter traffic until 1918 and 1921 respectively. Only nineteen 8Ms were built, with one of the first batch being built as the prototype B6 (GCR Class 8N 4-6-0). Class 8M was not continued any further and two of the 8M locomotives were rebuilt as 8Ks in 1922.

At the grouping of Britain’s railways in 1923, the London & North Eastern Railway (LNER) inherited 131 8K 2-8-0s. It designated the class as O4. When the ROD reduced its asking price for war-surplus locomotives the LNER augmenting its O4 fleet with a further 125 purchased in December 1923, another 48 in February 1925 and a final 100 in February 1927. It is worthy of note that the price of these surplus engines depreciated quickly during the 1920s. Many of the LNER engines were purchased for as little as £340, equivalent to about £20,000 today. By 1929, the LNER’s stock of O4s totalled over 400, making it the company’s most numerous freight type.

As a result of the LNER’s acquisitions of a large number of former ROD engines, the O4s on its books were able to satisfy almost all the LNER’s heavy mineral locomotive needs until the railways were nationalised on 1st January 1948. The majority of the O4s were allocated to the LNER’s Southern Area, with only 24 distributed between the North Eastern Area sheds and merely sixteen to the Scottish Area. For example, at one time or another there were 184 variants of the class based at the former Great Northern Railway depot at Colwick, Nottingham.

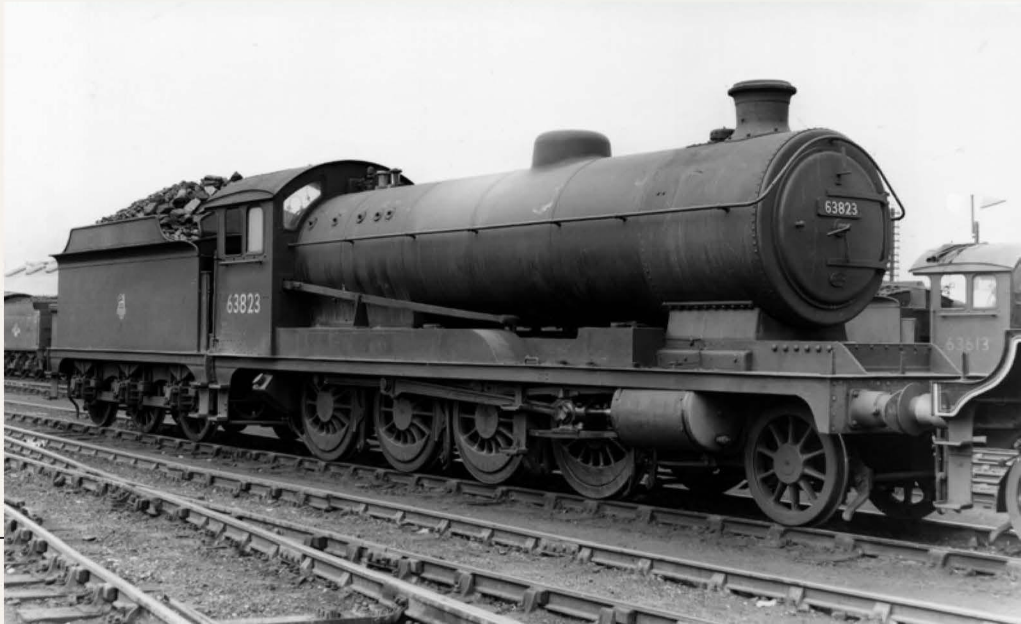
London & North Western Railway

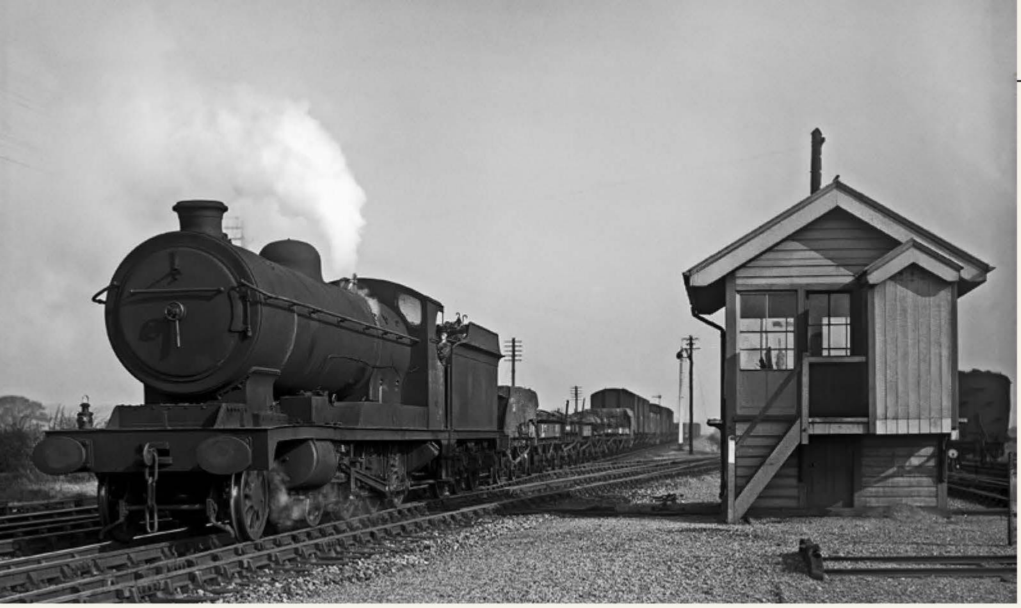
The London & North Western Railway (LNWR) also purchased 30 ROD 8Ks after the First World War. These purchases were classified as Class MM.

Great Western Railway

Elsewhere the Great Western Railway (GWR) bought twenty virtually new 8Ks from the Munitions Disposal Board in 1919 and numbered them 3000-19. A further 84 were hired in July 1919, but these were returned

Class O4/8 2-8-0 No.63823 is seen at Doncaster in 1958. This locomotive, built for the War Department in October 1918 by North British Locomotive Co. to Class O4/3 specification, was loaned to the LNWR in 1919 and subsequently taken into LNER stock. It was rebuilt to Class O4/8 in November 1957, withdrawn from Ardesley in August 1962 and thence to Gorton for scrapping. (Author’s Collection)





Class O4/5 2-8-0 No.6592 passes Willoughby with an up goods on 12th July 1946. This engine, built as an O4/3 by the North British Locomotive Co. in 1919, was rebuilt to O4/5 configuration in September 1939. (Rail Archive Stephenson)

in October 1922. In 1925 the GWR purchased an additional 80 engines (including some of those previously hired) and numbered them 3020–99. The poorest 50 were touched up and returned to traffic with their original steel fireboxes, ROD black paint and renumbered 3050–99. These locomotives were worked until they failed, after which they were withdrawn for scrap by 1930. The GWR gave the best 50 ex-ROD locomotives a proper thorough overhaul, fitting them out with copper fireboxes, Swindon-style top feed and brass safety valve housings and painting them GWR standard green. The leading dimensions of the GWR former ROD engines were generally the same as the GCR Class 8K but the GWR raised the operating boiler pressure marginally to 185psi which improved the tractive effort from 31,32lbf to 32,197lbf.

London Midland & Scottish Railway

In 1927 the London Midland & Scottish Railway (LMS) bought 75 former Railway Operating Division ROD 8K 2-8-0s from George Cohen and the Armstrong Disposals Corporation – allegedly for their tenders, which were then mainly used on 'Claughton' 4-6-0s but also on smaller locomotives of 4-4-0 and 4-6-0 wheel arrangement. The LMS Initially gave the ROD locomotives a power classification of 5 but this was subsequently revised to 7F. However, the ROD's range of operations on the LMS was limited by its high axle loading. 25 of these engines were scrapped by the LMS between 1927 and 1930. The remaining twenty were overhauled and pressed into service as numbers 9646-65 in 1927 and 1928. Several were later renumbered but some were withdrawn before they had a chance to receive their allotted numbers. All were withdrawn from service by 1933 along with LNWR acquisitions of the class.

Overseas purchases

Thirty of the engines purchased by the LMS were sold on, minus their tenders, to China, were they became Chinese Government Railway Class KD4. Three of the locomotives sold to China were only retired in 1990.

Thirteen more RODs were purchased direct from the UK War Department by J. & A. Brown and sent to Australia, for use on the privately owned Richmond Vale Railway in New South Wales. Nine of these (Nos.12-20) were built by the North British Locomotive Company in Glasgow, one (No.21) by Kitson & Company in Leeds and three (Nos.22-24) by the Great Central Railway. They were bought between March 1925 and March 1927. The first three arrived in Australia complete on the SS *Boorara* in February 1926, were unloaded in Sydney and towed to their home base at Hexham. In late 1927 the remainder of the order arrived in crates on Brown's new ship the SS *Minmi* on its maiden voyage to Hexham. The dismantled locomotives were slowly reassembled with the last not being complete until 1931. However, all thirteen locomotives were never in service at the same time. The maximum number in service at any one time was ten during 1954. The last of the Australian RODs was not withdrawn until June 1973. (see 'Brits Down Under' in *BT* Vol.39 No.6)

LNER developments

The O4s were first built with Robinson's standard 1ft 10¼in high chimney. In 1923 the LNER fitted one locomotive with a B7-type 1ft 3in chimney for trials in Scotland. Ten ex-ROD engines also had these chimneys fitted in 1924 for use in Scotland. The original Robinson chimneys had a propensity to crack and they were progressively exchanged from October 1923 with Doncaster 'Flowerpot' chimneys. From 1933 reduced-height domes and Gorton plain-waisted 1ft 5½in chimneys were fitted to the remaining unrebuilt O4s to bring them within the LNER's Composite Loading Gauge.

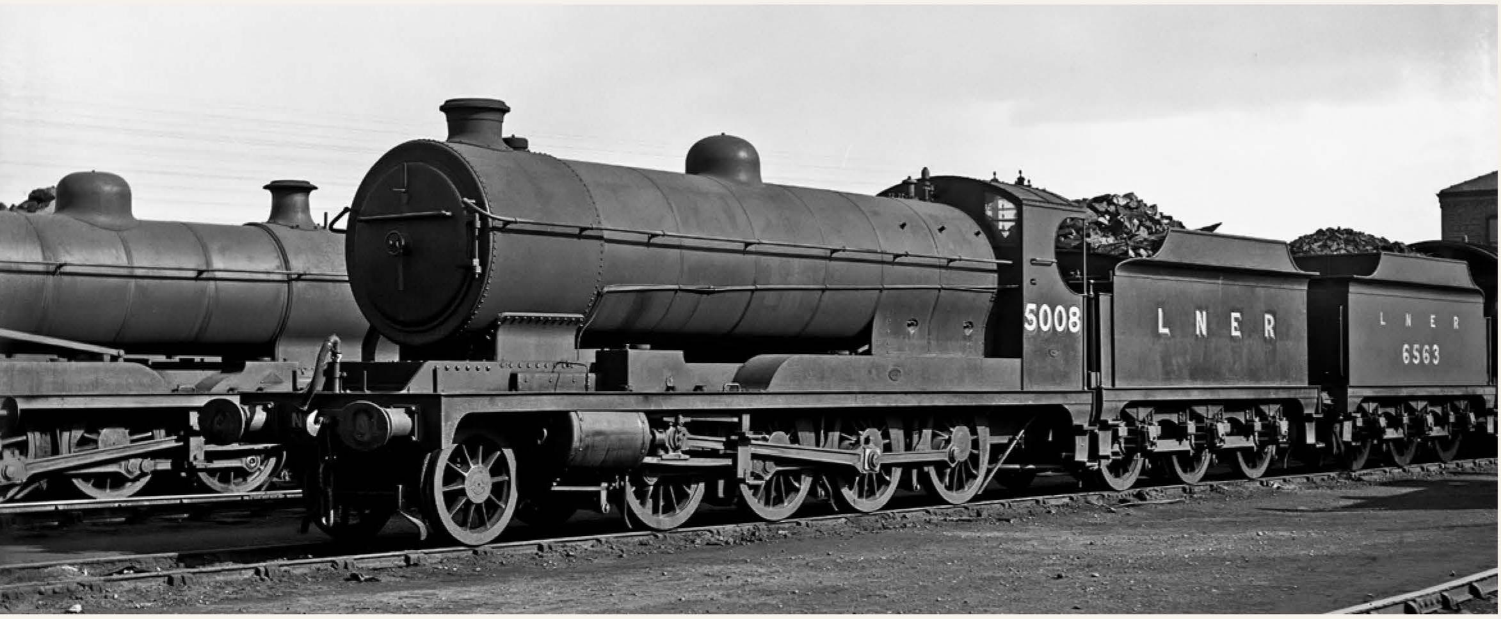
The LNER developed the O4 Class through many rebuildings and reboilerings, assigning them into eight sub-classes but many survived in their original form until British Railways (BR) withdrew them in the 1960s.

Class O4/1, introduced in 1911, were the original Robinson GCR design with small boiler, Belpaire firebox, steam and vacuum brakes and tender water scoop.

Class O4/3, introduced in 1917, were locomotives built for the ROD with steam brake only and no water scoop. They were reclassified O4/1 in 1947.

Class O4/2 was O4/3 engines with reduced height cabs and boiler mountings to fit the Scottish loading gauge. They were adapted from 1925. They were originally coupled to

LNER 2-8-0 No.5008 shown in its O4/5 configuration pre-1946 as rebuilt in 1939 with the new shortened O2 boiler with round top firebox and the smokebox on a saddle. The O4/5s retained their original GCR style cabs. (Rail Archive Stephenson)



3,250-gallon tenders but by 1925 they had 4,000-gallon tenders. They were reclassified O4/1 in December 1946.

Doncaster had a strong predilection for round-topped boilers and there was a number of endeavours to rebuild the O4s with round-topped boilers in-place of their Belpaire originals. Although the GCR had tried a similar reboilering in 1921, the LNER did not start until 1929 when two O4s were rebuilt with 5ft 6in diameter round top boilers of the same design as those fitted to the Gresley O2 2-8-0s. The locomotives thus rebuilt were fitted with side window cabs. These rebuilds required extended frames and were classified as O4/4. The last of these was converted to O4/8 in 1947.

In 1929 two O4s were rebuilt with 5ft 6in boilers of the same type as used on the Great Northern Railway O2 2-8-0s. These rebuilds required frame extensions and were classified as O4/4. In 1932 a shortened version of the O2 boiler was produced and was used on four O4s. Five further O4s were rebuilt with the new shortened O2 boiler in 1939. All nine were classified O4/5. The O4/5s had round top fireboxes with the smokebox on a saddle. They retained their original GCR-style cabs. These locomotives were later rebuilt again by Edward Thompson with new cabs and Diagram 100A boiler (as used on his B1 4-6-0s).

Class O4/6, introduced in 1938, were rebuilt from the original large-boilered Robinson 8M (LNER Class O5) locomotives retaining their higher, widened cab. BR Nos.63914-20 had side windows. All their cabs were eventually reduced in height.

In 1939 a further reduction in length (Diagram 15D) was applied to the O2 boiler design and this was used on 47 O4 rebuilds by 1947. These were classified O4/7 and retained their GCR smokebox.

Class O4/8, introduced 1944, was O4 Class locomotives rebuilt with Diagram 100A B1-type boiler and B1-style side window cab but keeping the original valve gear and cylinders. A total of 99 O4/8s were built between 1944 and 1958.

Lastly, the O4s formed the basis of Thompson's own standard 2-8-0 mineral engine, the O1 Class. In 1944 58 O4s were rebuilt with 100A boiler, Walschaerts valve gear and new cylinders at Gorton Works, thereafter classified O1. They had a much more contemporary form and looked like a 2-8-0 form of the B1 Class. Their tractive effort was 35,520lbf.

War service (Second World War)

At the outbreak of World War II it was anticipated that the British Army would want O4s and the LNER commenced preparation of 300 of the class for requisition. 57 were readied before the initial order was cancelled. All 57 resumed LNER service. The GWR borrowed 30 Class O4 locomotives from the LNER in November 1940, of which two were returned the following April. Ten were returned in July-August 1942 and the rest in January-February 1943. On the GWR they retained their LNER numbers, which were scattered between 5391 and 6639. Three of these had been hired by the GWR between 1919 and 1922. The locomotives were widely spread over much of the GWR system, being used on heavy freight trains.

In due course the War Department did indeed once again need heavy freight engines so in September 1941 it requisitioned 92 LNER Class O4 locomotives (and 50 LMS 8Fs). Sixty-one of the O4s that were demanded were RODs that had been overseas before and had been bought by the LNER in the mid-1920s after being used in France during the First World War and 31 were original GCR Class 8K engines. They were sent to Egypt and Palestine, where they were used to open up a supply route through Persia to Russia. They operated on Egyptian State Railways, Palestine Railways, the Haifa, Beirut and Tripoli Railway between Palestine and Lebanon, the Chémin de Fer Damas-Hama et Prolongements in Syria and Iraqi State Railways. Iraqi State Railways had six specimens and labelled them Class RD. In March 1967 at least one endured in storage at Shalchiyah works outside Baghdad awaiting disposal. None returned to Britain and they were written off the LNER's books in December 1943. The final sale price of £5,700 to the Government was finalised in 1947. This related very favourably to their original purchase prices from the ROD!

British Railways

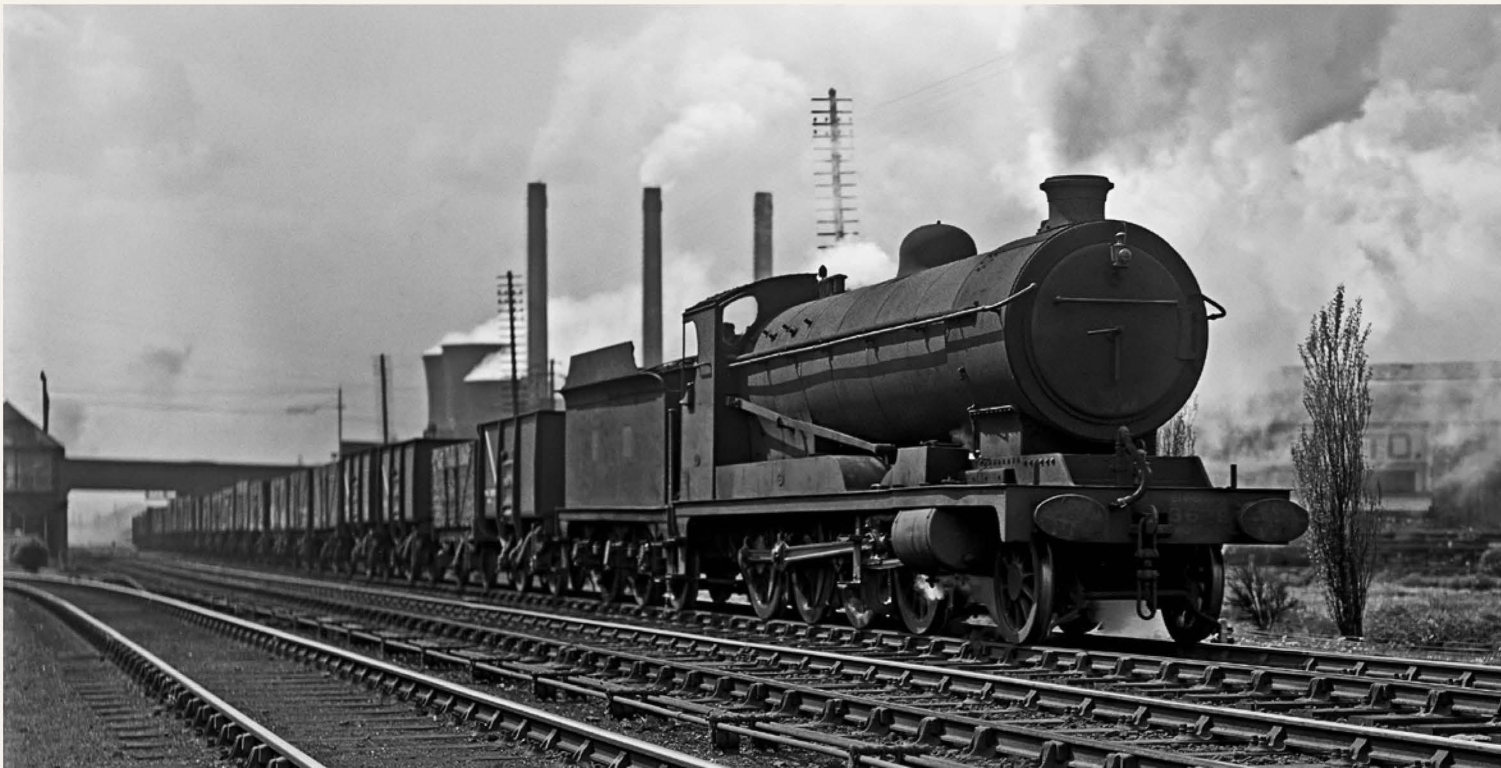
399 engines (comprising all LNER variants of the Class O4, the 46 surviving GWR RODs and 51 LNER Class O1 engines) came into British Railways (BR) ownership on 1st January 1948 with the nationalisation of Britain's railways. Seven more O4s were rebuilt to Class O1 specification between 1948 and 1949. Five LNER O4s were withdrawn in 1952 and sold to the War Department. They were adapted to burn oil and sent to the Suez Canal zone where they were used until 1955. They were afterwards used on the Egyptian State Railway until withdrawn in 1961.

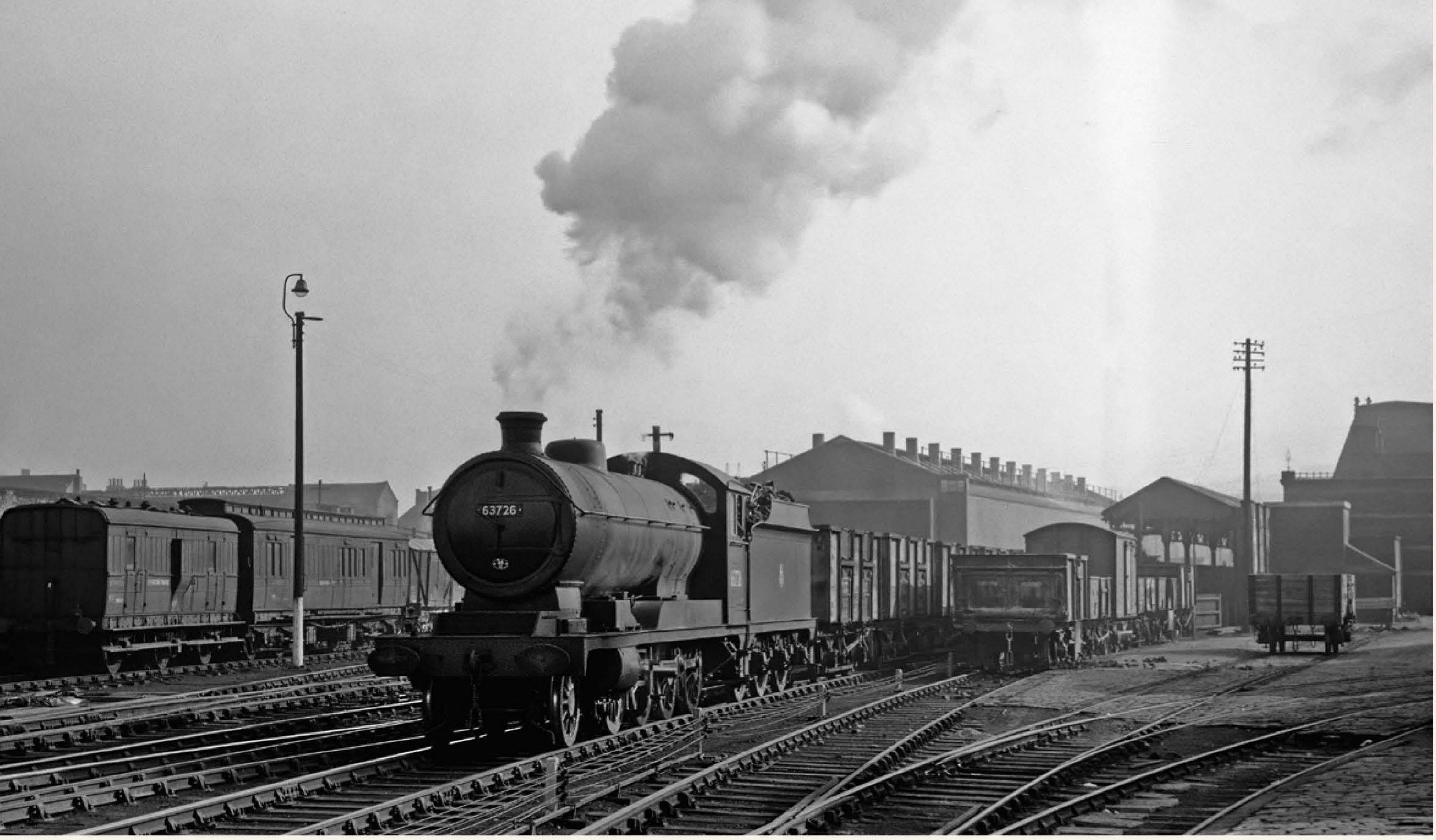
The remaining LNER O4s were given the power rating of 7F while the O1s were classified as 8F, meaning that they were rated for heavy freight working. They were given BR numbers in the range 63570-63920 and were extensively used on goods trains across the Eastern and North Eastern Regions of BR. Classified rather prosaically by the GWR as Class 'ROD', the GWR survivors were numbered 3002-3049 and could be found in places such as Pontypool Road, Banbury, Worcester, Didcot, Croes Newydd, Bristol St. Philips Marsh, Carmarthen and Cardiff Canton. Five locomotives (Nos.3011, 3015, 3024, 3036 and 3041) were still in service in 1957 and of these Nos.3036/41 were withdrawn in March 1958, the others in October the same year. Withdrawals of former LNER locomotives began in 1959 and proceeded steadily, although they continued to perform good solid work during the 1960s. Many were retained for colliery trip work in South Yorkshire. The last Belpaire boiler O4 was withdrawn in February 1966. The class finally disappeared from service in April 1966 when four O4/8s were withdrawn from the Doncaster area.

Preservation

One pre-war GCR 8K (LNER O4/1) is preserved in the UK in the collection of the National Railway Museum, currently residing

Class O4/5 2-8-0 No.3628 (ex-5008) passes Parkgate, Darlington, with a down empty wagon train on 1st May 1948.
(Wm. Rogerson/Rail Archive Stephenson)





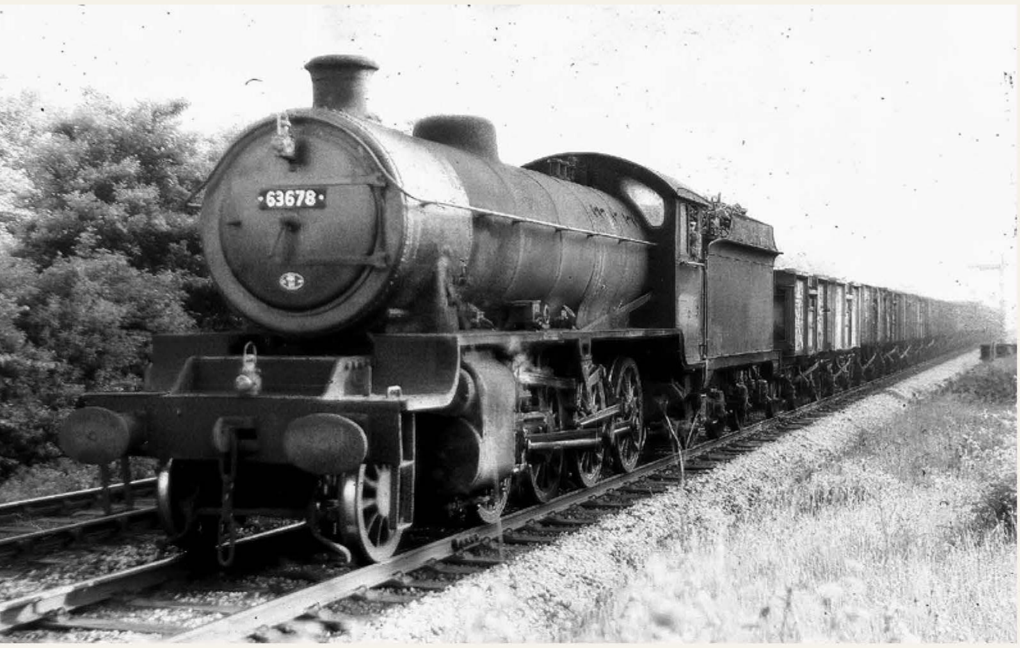
Built in October 1919 by Robert Stephenson & Hawthorn's as an O4/3, No.63726 is shown as rebuilt to O4/5 on a coal train for the Manchester area via Penistone as it passes Barnsley Exchange.
(Rail Archive Stephenson)

at the heritage Great Central Railway at Loughborough, Leicestershire. This is GCR No.102, renumbered initially by the LNER as No.5102, renumbered in 1946 as No.3509, again to No.3601 in 1947 and finally wearing BR No.63601.

This locomotive was built at the GCR Gorton Works in January 1912 as part of the first order for twenty 8Ks at a cost of £3,352. In the course of its operational life No.63601 was allocated to sheds serving the very demanding Pennine route from Manchester, through the Woodhead Tunnel, to Sheffield and on to Immingham. Its first allocation was to Gorton on 14th March 1912 after which allocations to Sheffield, Mexborough, Barnsley, Doncaster, Frodingham and Immingham followed. Engines of Class O4 were heavily engaged in this work and in the build-up of the steelworks at Frodingham where iron ore was brought in and finished steel rolled out. During its working life No.63601 had to withstand the hardships of two World Wars when substantial and unremitting traffic was sustained with very little heavy maintenance. Its survival into the last days of steam in essentially its 1912 form, together with some of its contemporaries, is a tribute to the quality of the original design and build. As an example of one of the most successful steam locomotive designs ever and one of the last three 8Ks surviving with a Belpaire boiler, No.63601 was chosen for preservation in 1960 soon after its last general overhaul. It was withdrawn from Frodingham (36C) in June 1963. It ended its service life with boiler No.22877, built in 1940, the boiler which it still carries.

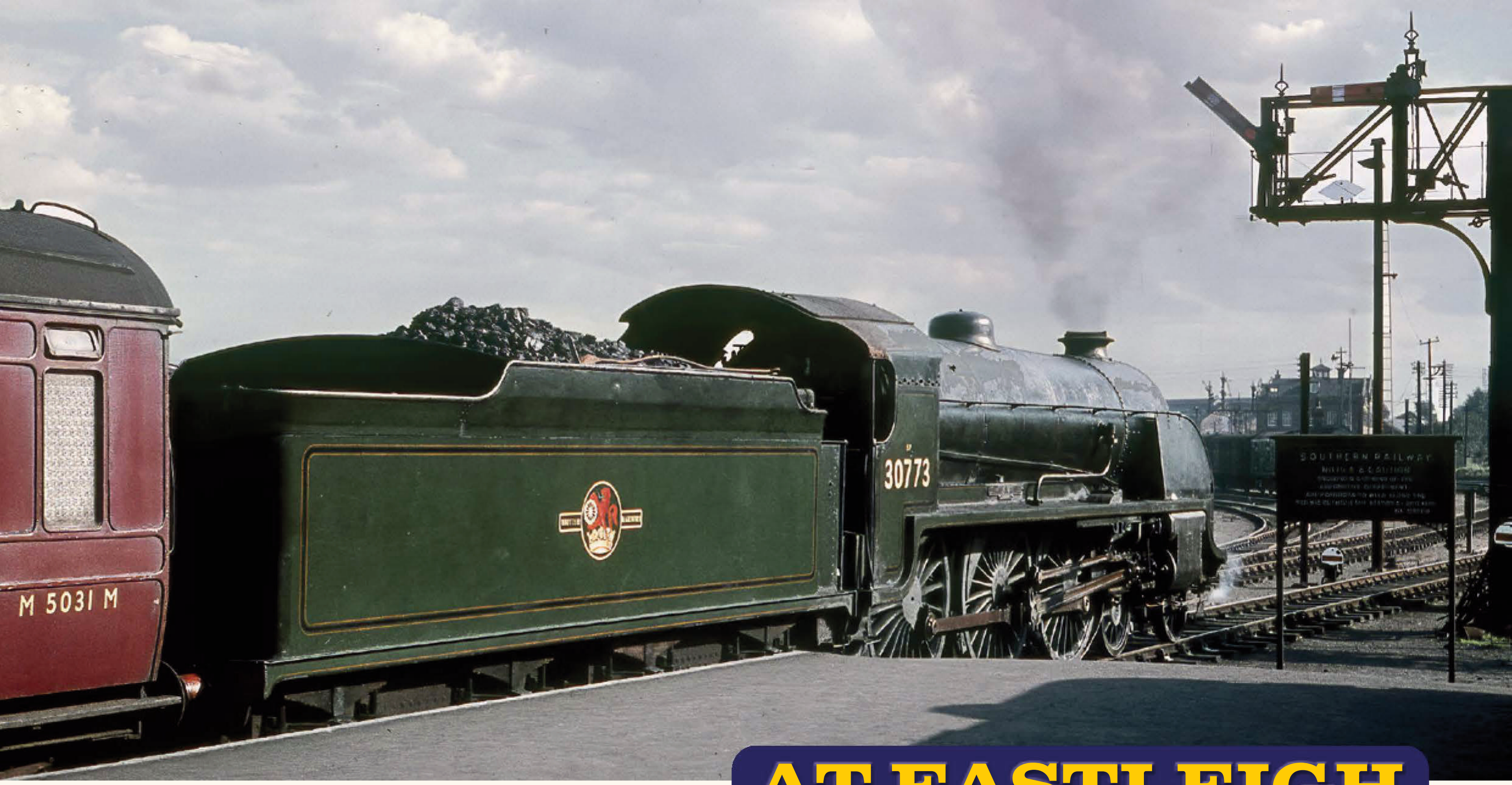
Three ROD-built O4 examples, Nos.20, 23 and 24 (ROD Nos.1984, 2004 and 2003), purchased by J. A. Brown & Company between 1925 and 1927, have been preserved in Australia. No.1984 was built in 1918 by the North British Locomotive Company, and was loaned to the Lancashire & Yorkshire Railway and London & North Western Railway during the period November 1919 to August 1921, before being sold to J. &A. Brown in 1925. No.1984 is believed to have been last steamed in 1967 when the network was cut back. Nos.2003 and 2004 were built by the GCR at its Gorton Works, also in 1918.

The final rebuild of the O4 Class 2-8-0 was by Edward Thompson for the LNER from 1939. Here we see O1 Class 2-8-0 No.63678, built at Gorton as Class O4/1 in May 1912, rebuilt to Class O1 at Gorton in December 1944, withdrawn from Staveley GC in July 1963. The engine is seen on a mineral working at Colwick Woods probably during its allocation to nearby Annesley from November 1950 to February 1957.
(Author's Collection)



Conclusion

John G. Robinson is most remembered for his tough and capable Great Central Railway Class 8K and 8M 2-8-0 freight engines. The man himself acknowledged that it was his best design. The 8K became one of the most successful British steam locomotive designs of the twentieth century. It was adopted by the UK Government for military purposes during World War I and used overseas during World War II. Including wartime construction for the British Army ROD and the post-war GCR Class 8M, the class and its derivatives totalled 666 locomotives. As the LNER Class O4, it became the most numerous of LNER heavy goods locomotives. The LNER examples experienced many rebuildings and reboilerings, but many survived in their original form until British Railways withdrew them in the 1960s.

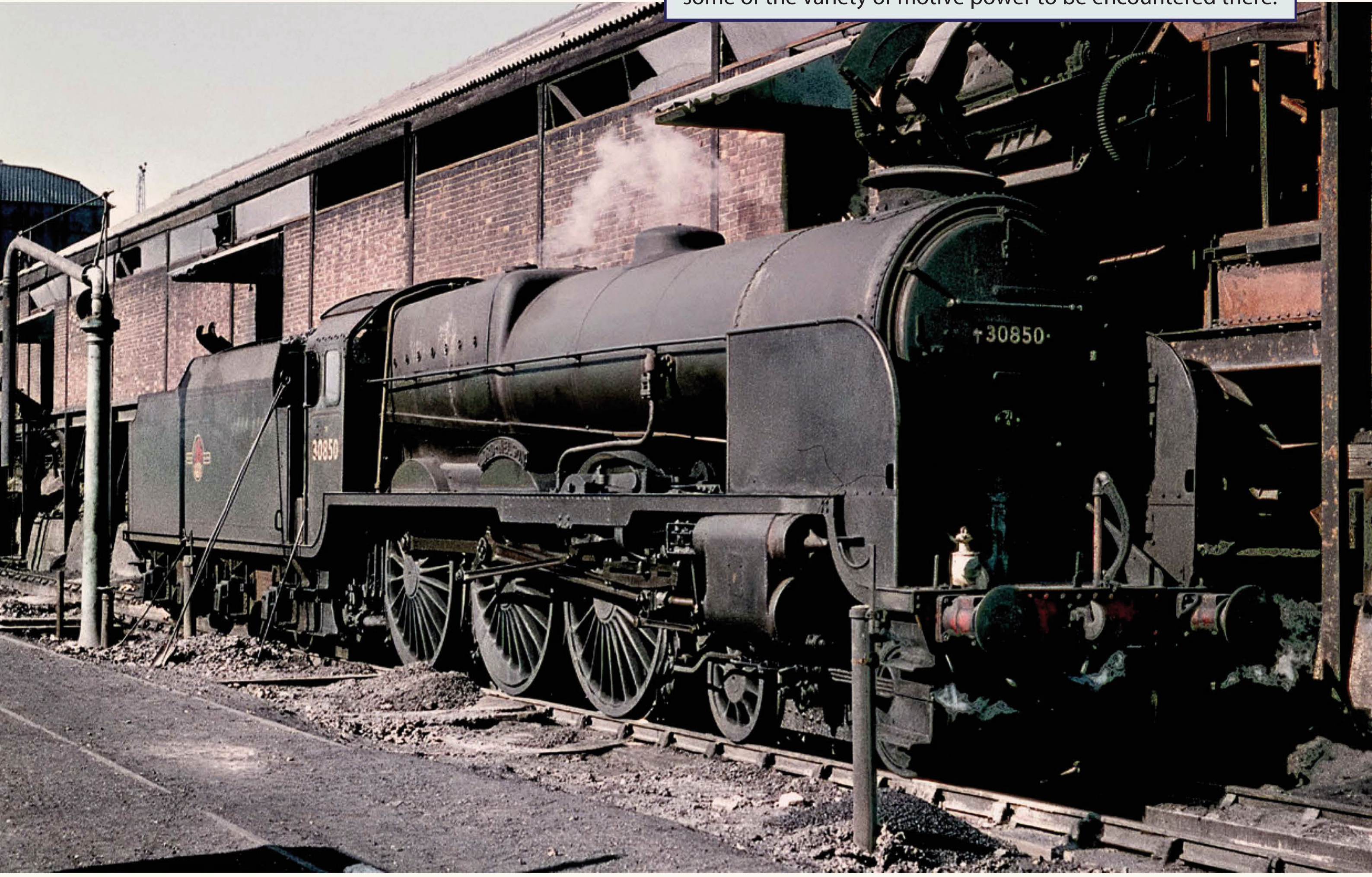


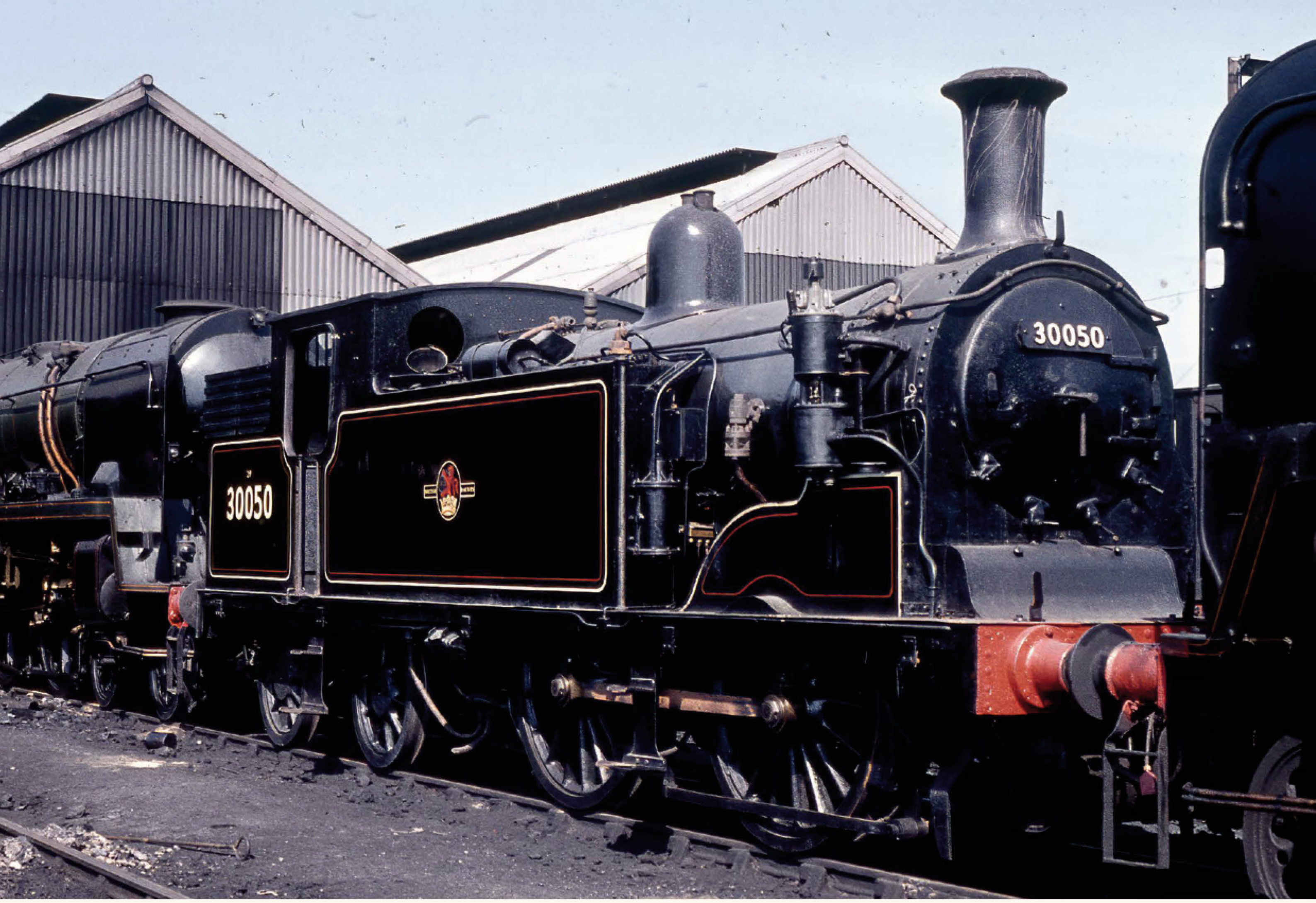
ABOVE: **Maybe the South Western's finest? The N15 'King Arthur' Class 4-6-0s first appeared on the LSWR in 1918 and were perpetuated by the Southern Railway in 1925. No.30773 *Sir Lavaine* is signalled away from Eastleigh station with the 5.15pm to Portsmouth on 15th August 1961.**

BELOW: **Another SR express design was the 'Lord Nelson' 4-6-0 from 1926 and represented here is the first of the class, none other than No.30850 *Lord Nelson* himself, photographed by the coaling stage at Eastleigh shed after having its fire cleaned on 15th August 1961.**

AT EASTLEIGH

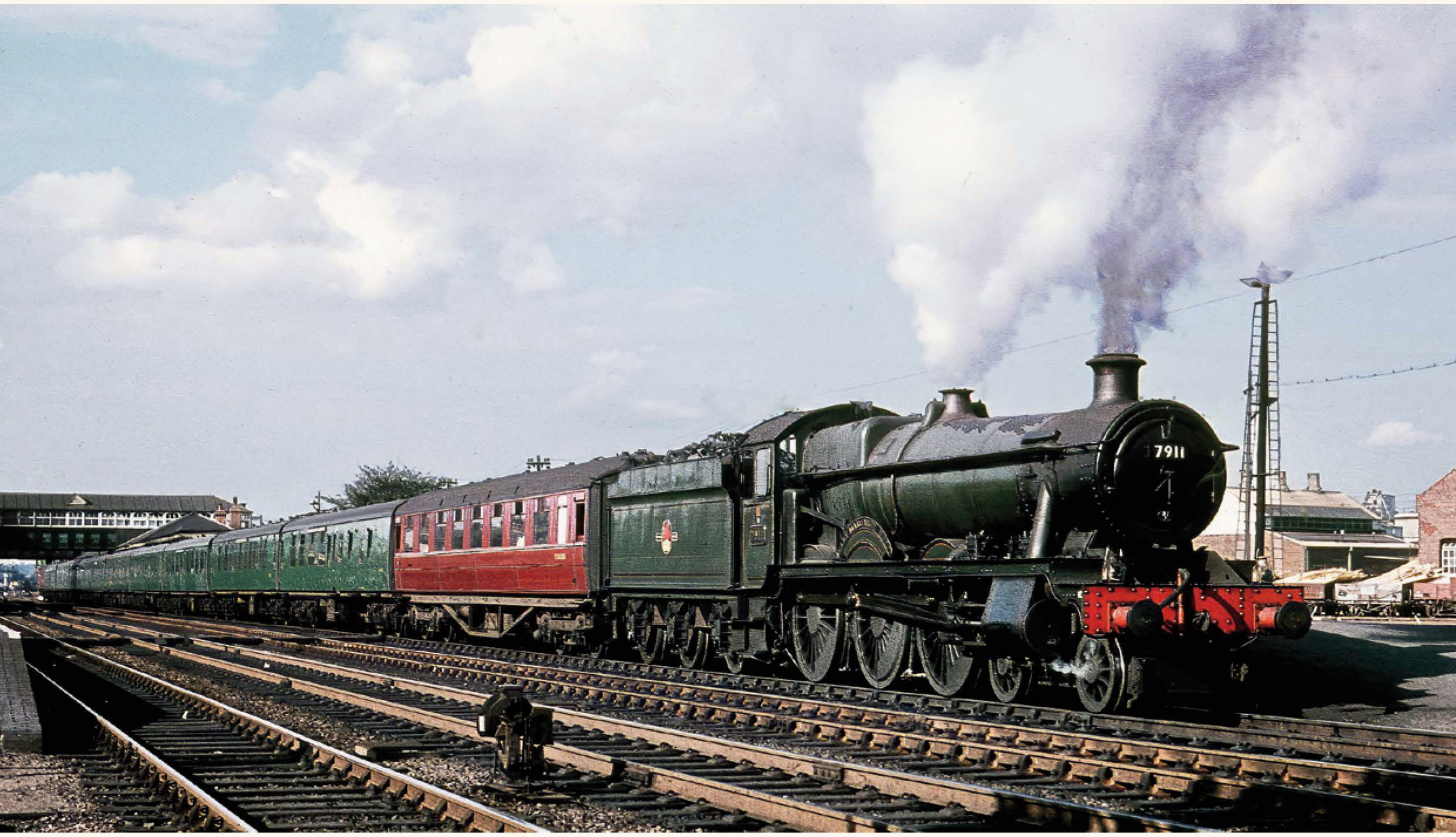
Eastleigh, in Hampshire, developed as a railway town, the London & South Western Railway setting up its carriages shops there in 1891 and establishing its locomotive works (previously in London at Nine Elms) in 1909. With its position on the South Western main line from London to Southampton and Bournemouth, with junctions to Portsmouth and Romsey, Eastleigh not surprisingly became a 'place of interest'. **GAVIN MORRISON** photographed some of the variety of motive power to be encountered there.

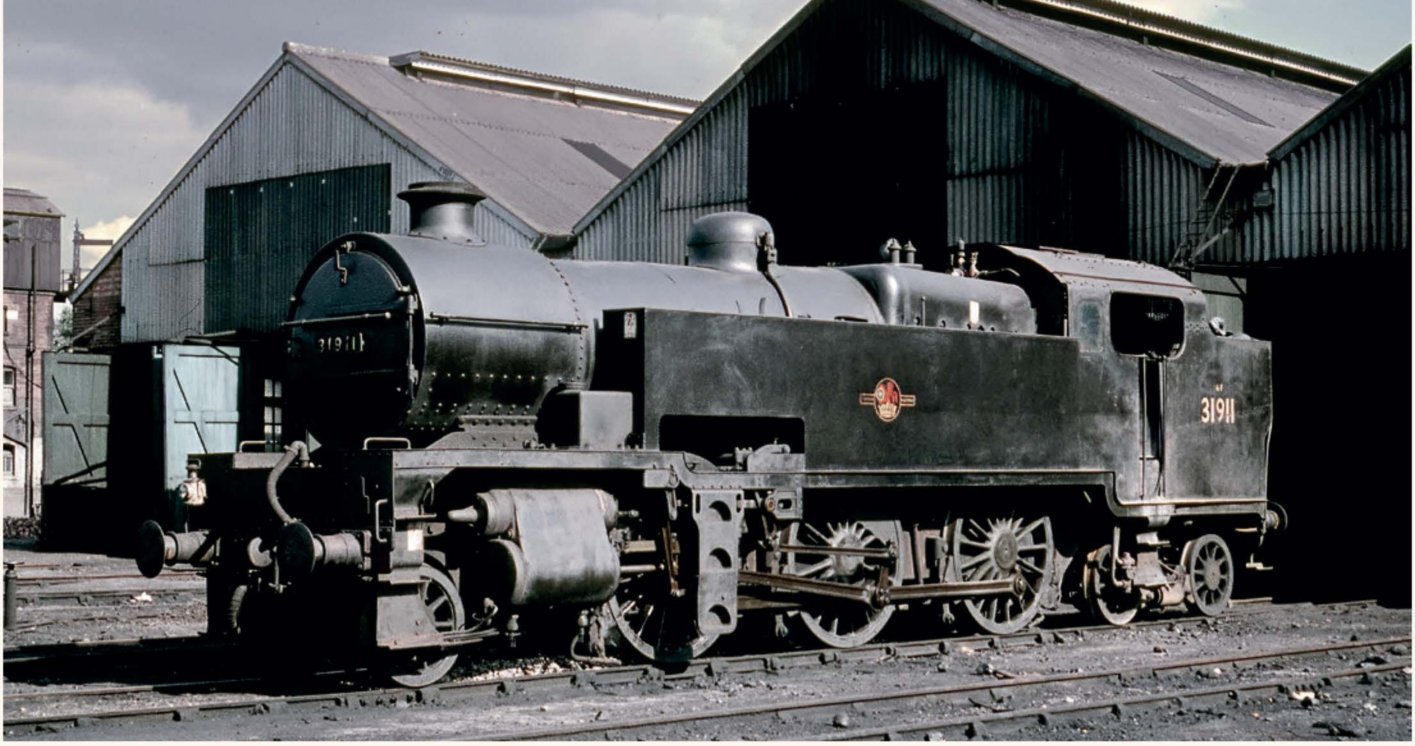


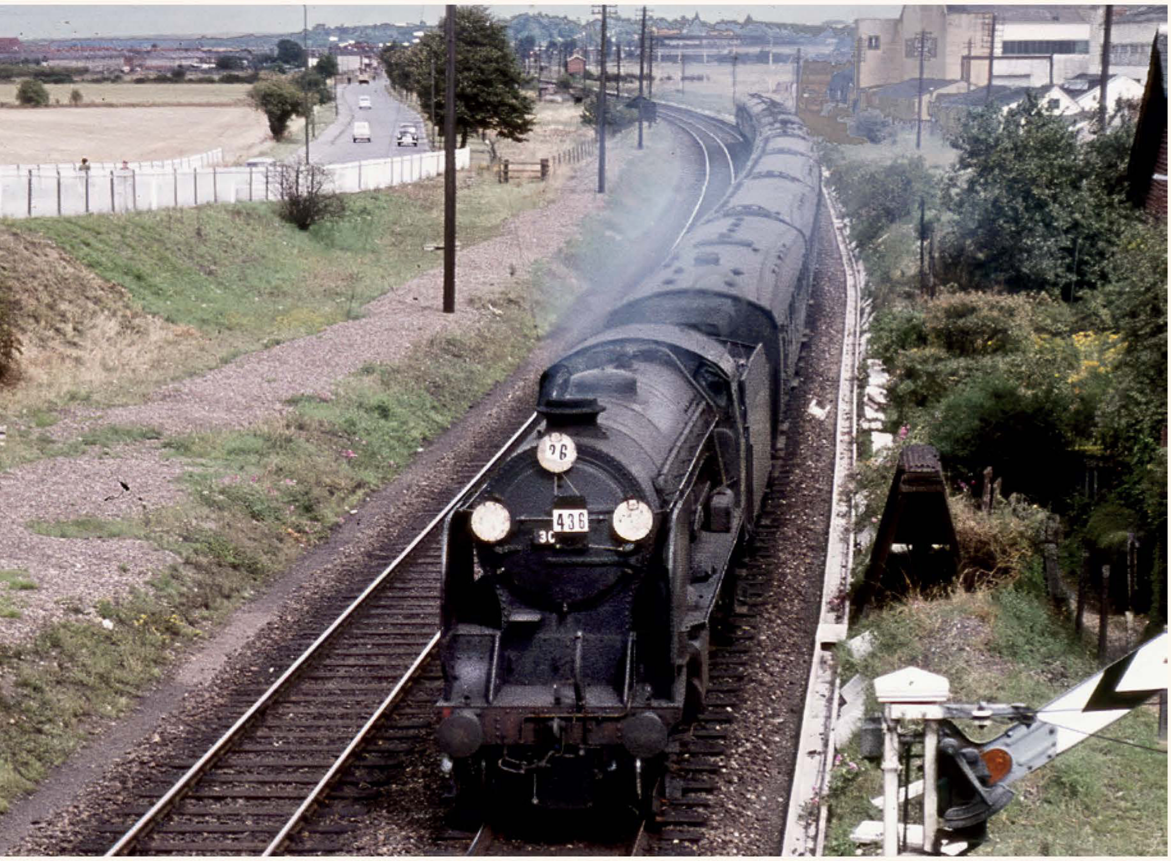


ABOVE: **Spanning the generations on 11th September 1960. LSWR M7 0-4-4T No.30050, built at Eastleigh in 1905, is just out of the works and rejoicing in its new coat of paint between two post-war rebuilt SR Pacifics also newly out-shopped.**

BELOW: **Cross-country trains making for the South Coast often brought Great Western motive power to Eastleigh. This Birkenhead–Bournemouth train has 'Modified Hall' 4-6-0 No.7911 *Lady Margaret Hall* in charge of mostly Southern Region green stock, though with an ex-LNER Gresley carriage at the front, when leaving on 15th August 1961.**



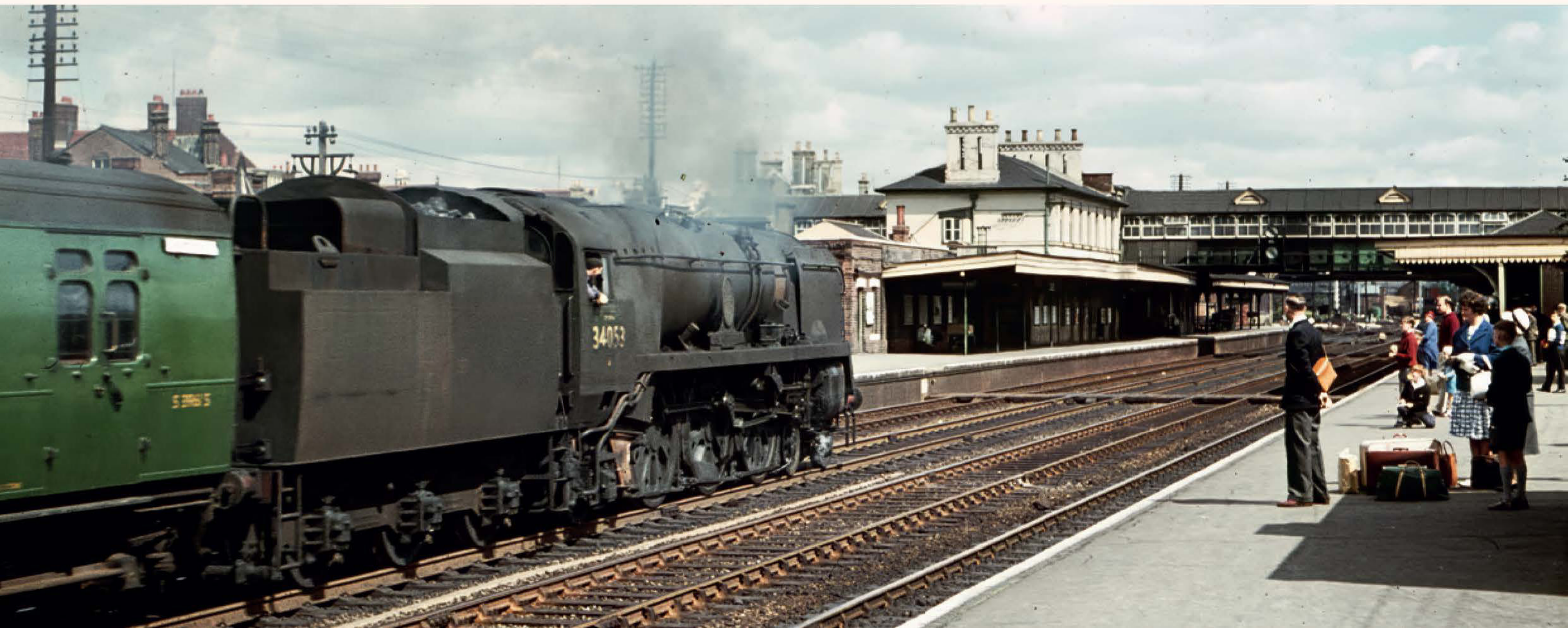


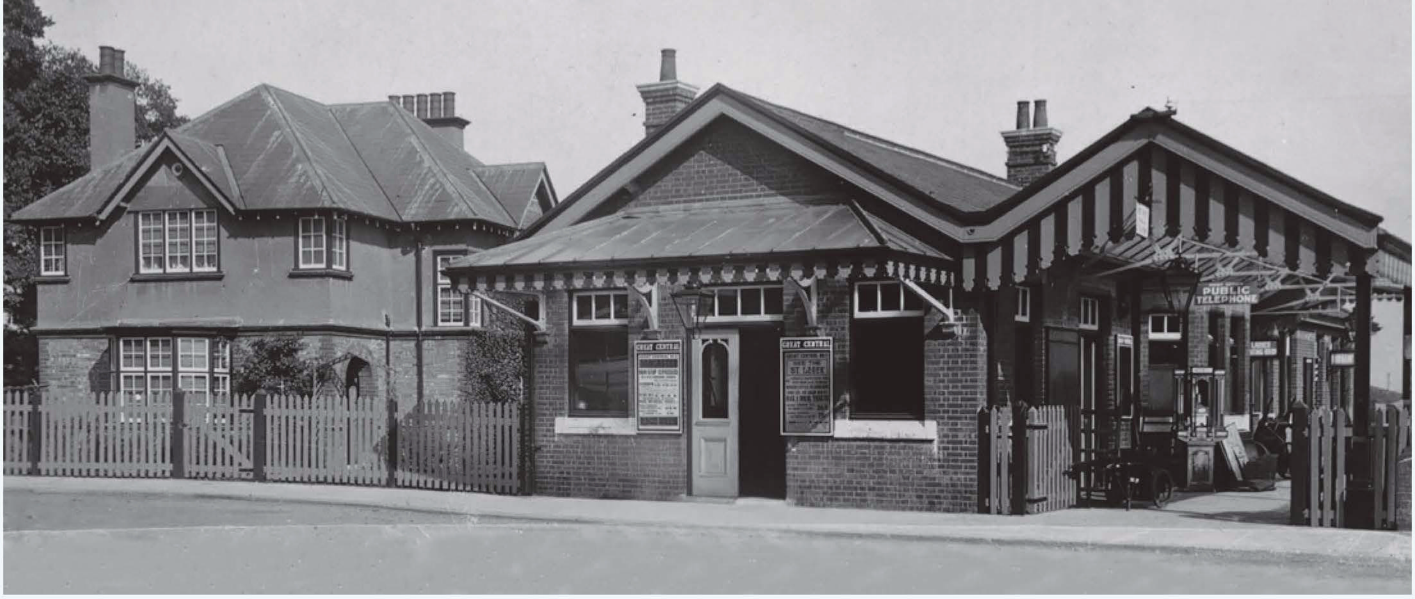


ABOVE: **On shed on 17th August 1961 is W Class 2-6-4T No.31911, one of the large SR tanks built for transfer freights across London but allocated to Eastleigh three months before.**

LEFT: **One of the excellent 'Schools' 4-4-0s, No.30902 *Wellington,* on a long working from Nine Elms shed, runs past a clear distant signal between Eastleigh and Swaythling with a summer Saturdays express from London Waterloo to Lymington Pier on 18th August 1961.**

BELOW: **At Eastleigh station rebuilt 'Battle of Britain' 4-6-2 No.34053 *Sir Keith Park* catches everyone's attention as it hurries through with an up express to Waterloo on 4th August 1962. It was a Bournemouth engine at the time – the shed was short of cleaners, it seems?**





The Great Central's new Wembley Hill station, now 'Wembley Stadium', opened in 1906 and it was characteristically modest in what was then a developing suburb. Passengers from Marylebone would probably have chosen the service to the new Exhibition station. (John Alsop Collection)

WHEN THE WORLD FIRST CAME TO WEMBLEY

RAILWAYS AND THE BRITISH EMPIRE EXHIBITION 1924-25

BY GEOFFREY SKELSEY LVO

The euphoria which followed allied victory over the Central Powers in 1918 was short lived. The myriad deaths and wounds left scarcely a family untouched, whilst the sudden extinction of three former European Empires ushered in an uncertain and troubling world. Where would revolution end? What did the future hold? What role for Great Britain and her Empire? Disruption of established markets, financial instability and signs of separatism from the British Dominions, not to mention in India, showed that the pre-war world, with its comforting deference towards the 'Mother Country', was gone. It was in such a context that the idea of a great Imperial exhibition and showcase, first considered before the War, was revived and took shape. Wembley Park, which the Metropolitan Railway had purchased in 1890, was selected as the site.

As a result, almost by chance, the name 'Wembley' achieved almost universal recognition throughout the world, chiefly amongst those interested in football but at least recognised by many others. This stemmed, of course, from the 'Empire Stadium', built in 1923 as a preliminary to the Exhibition. It was first used for the Cup Final on 28th April that year, attended by as many as 200,000 spectators. The great majority of these were carried without fuss by the Metropolitan Railway to its Wembley Park station. So it was in the ensuing years that Wembley became a synonym for football. The initial plan had been to hold the Exhibition at White City, which would not perhaps have sounded quite so sonorous. The Exhibition had been intended to last for one summer season, but disappointing results in 1924, partly due to poor summer weather, led to a hasty decision to open for another season in 1925.

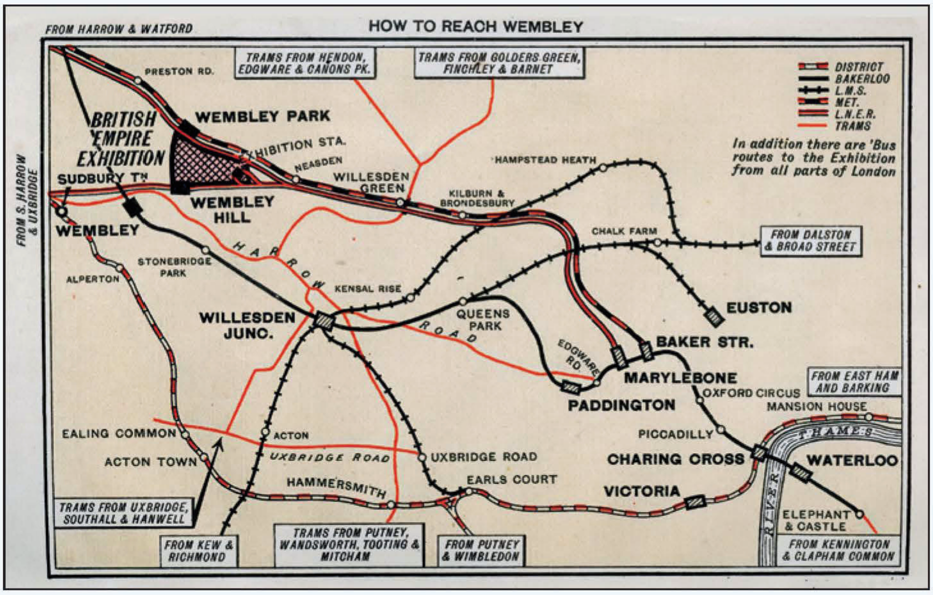
The Government announced that the Exhibition would "show scientific principles and research' and would 'enable established businesses to show what they have to offer".

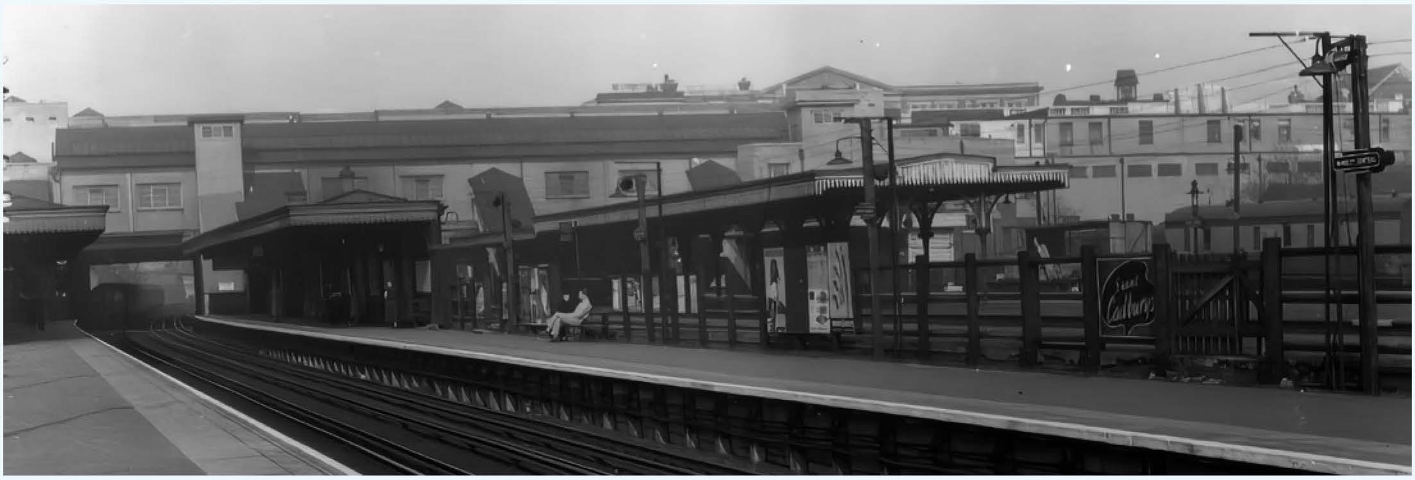
In this article we will see how railway transport was crucial to handling crowds of visitors to the Exhibition and also glance at some of the railway rolling stock and other material on display. The prominence given to rail transport was appropriate. Railways had been instrumental in developing the Empire, partly by bringing products and raw material to the docksides, and also by developing the interior. Colonial railway construction started remarkably early in the railway age, in Jamaica from 1845 and British Guiana (Guyana) in 1848. Initial development had been largely based on British practice and was an instance of British technology applied to Empire trade. Another was the world-changing practice of shipping frozen meat, which not only contributed to the economic progress of nations such as Australia and New Zealand but also – almost at a stroke – cheapened food at home and altered the diet of Britons.

On a larger scale the development of some nations had depended on the unifying force of railways, notably in Canada which was in effect created by the transcontinental Canadian Pacific Railway, leading directly to confederation. Prior to that, in Professor Nicholas Mansergh's words, Canada had been "a railway in search of a state". Conversely, however, railway development in Australia impeded interstate commerce. Before Confederation in 1901 each of the original colonies chose its own railway gauge, an error which took decades to rectify.

The central concept behind the Exhibition was simple. Countries of the

This colour plan was widely published in 1923-4, including in many guidebooks. Note the four stations serving the Exhibition. The plan shows tramways but not bus services.


HOW TO REACH WEMBLEY
FROM HARROW & WATFORD
FROM S. HARROW & UXBRIDGE
TRAMS FROM HENDON, EDGWARE & CANONS PK.
TRAMS FROM GOLDERS GREEN, FINCHLEY & BARNET
DISTRICT
BAKERLOO
L.M.S.
MET.
L.N.E.R.
TRAMS
In addition there are 'Bus routes to the Exhibition from all parts of London
PRESTON RD.
BRITISH EMPIRE EXHIBITION
WEMBLEY PARK
EXHIBITION STA.
NEASDEN
WILLESDEN GREEN
SUDBURY T^N
WEMBLEY HILL
WEMBLEY
HAMPSTEAD HEATH
KILBURN & BRONDESBURY
CHALK FARM
FROM DALSTON & BROAD STREET
STONEBRIDGE PARK
ALPERTON
HARROW ROAD
KENSAL RISE
WILLESDEN JUNC.
QUEENS PARK
EUSTON
BAKER STR.
EDGWARE RD
MARYLEBONE
PADDINGTON
OXFORD CIRCUS
FROM EAST HAM AND BARKING
MANSION HOUSE
EALING COMMON
ACTON
PICCADILLY
ACTON TOWN
UXBRIDGE ROAD
UXBRIDGE ROAD
CHARING CROSS
THAMES
WATERLOO
HAMMERSMITH
EARLS COURT
VICTORIA
RIVER
TRAMS FROM UXBRIDGE, SOUTHALL & HANWELL
ELEPHANT & CASTLE
FROM KEW & RICHMOND
TRAMS FROM PUTNEY, WANDSWORTH, TOOTING & MITCHAM
FROM PUTNEY & WIMBLEDON
FROM KENNINGTON & CLAPHAM COMMON



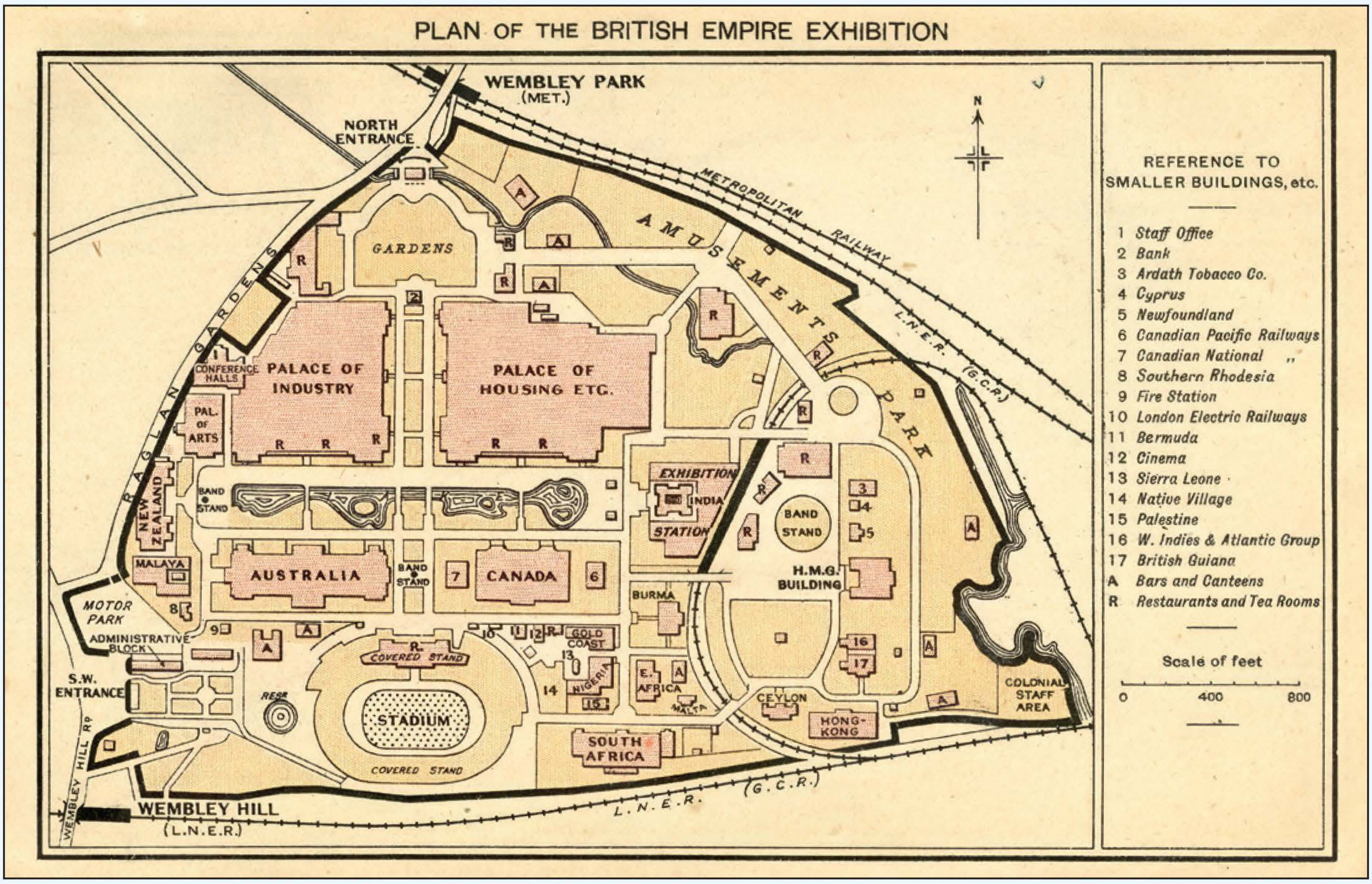
This view of what is now Wembley Central was taken long after the Exhibition, but at track level was much as it had been in 1924. Looking at the tracks in the foreground one can see the live rails powering the Bakerloo Line trains, one of which is visible in the distance. Probably this was the most convenient route from Central London.
(John Alsop Collection)

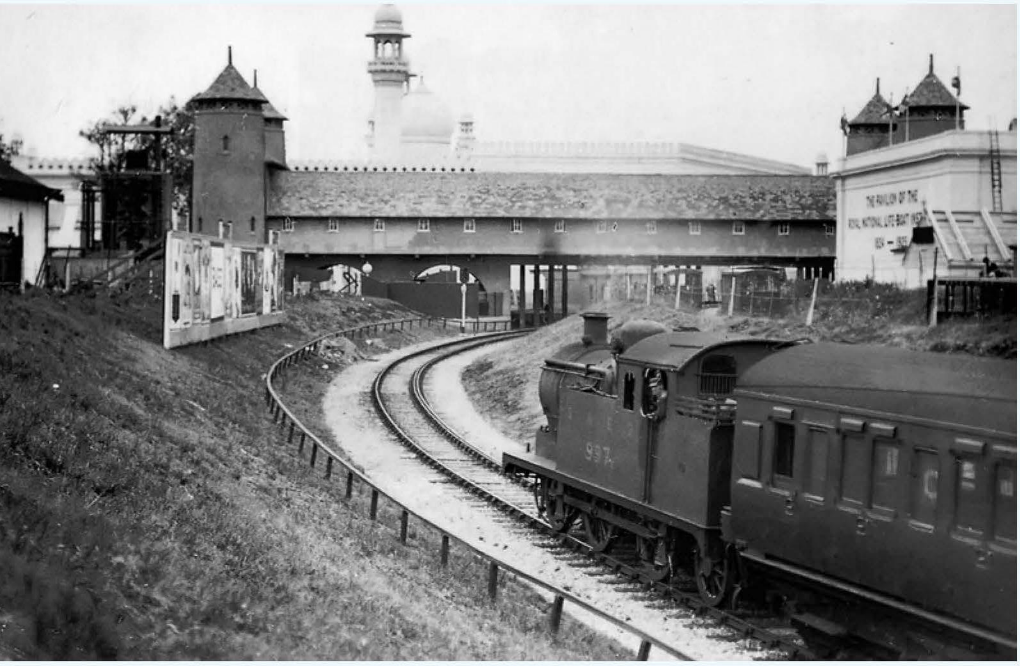
Empire were invited to showcase their products and manufactures, and also to display their way of life and development prospects. By more fully informing the public in this way the Empire would be, it was believed, revived and reinvigorated. For British manufacturers the opportunities for future business would be made clear. Individual countries, or groups of countries, eg the West Indies, were allocated space, leaving to them the character and style of their pavilions. Canada and Australia had very large buildings at the heart of the site, with more modest pavilions for New Zealand, South Africa and Newfoundland (not then part of Canada). Most of the buildings were built of ferro-concrete in massive style, although in some cases exhibitors (such as South Africa and Burma – Myanmar) had buildings suggestive of their national traditions. As well as these pavilions there were large buildings showing British achievements in industry, housing and engineering. What might have been a rather arid site was softened by gardens and lakes. Perhaps one of the more bizarre features, to present-day taste at least, was a replica coal mine in which visitors could watch “real miners at work”.

In fittingly Imperial style the roads across the Exhibition were named by Rudyard Kipling and choral music was composed by Edward Elgar.

Each exhibitor produced guides or catalogues, detailing the items on display but also explaining their background. In some cases, notably India, the publications amounted to thorough scholarly studies, still informative today. Many of these emphasised the role of railways. Fifty-six countries took part, the most prominent being India, Canada, and Australia. Only Gibraltar, Gambia and the Irish Free State chose not to exhibit, but the recently-formed Province of Northern Ireland was found space in a corner of the Palace of Industry. India withdrew from the second season, for financial reasons, and its building was devoted to a colonial bazaar. The organisers had budgeted for 25 million entries, but

This colour diagram of the site identifies the principal exhibitors and other facilities. The ‘Never-stop Railway’ isn’t shown but ran in an arc between the North Entrance at the top and a terminus near the Ceylon (Sri Lanka) Pavilion at the bottom, passing the LNER station. Notice the ‘Motor Park’ to the bottom left, but no reference to the bus station which was just outside the S.W. Entrance.


PLAN OF THE BRITISH EMPIRE EXHIBITION
WEMBLEY PARK (MET.)
NORTH ENTRANCE
METROPOLITAN RAILWAY
L.N.E.R. (G.C.R.)
AMUSEMENTS PARK
GARDENS
RAGLAN GARDENS
CONFERENCE HALLS
PALACE OF INDUSTRY
PALACE OF HOUSING ETC.
PAL. OF ARTS
BAND STAND
NEW ZEALAND
MALAYA
AUSTRALIA
CANADA
EXHIBITION
INDIA
STATION
BAND STAND
H.M.G. BUILDING
BURMA
MOTOR PARK
ADMINISTRATIVE BLOCK
S.W. ENTRANCE
RESR
COVERED STAND
STADIUM
GOLD COAST
NIGERIA
E. AFRICA
MALTA
CEYLON
HONG-KONG
SOUTH AFRICA
COLONIAL STAFF AREA
WEMBLEY HILL Rd
WEMBLEY HILL (L.N.E.R.)
L.N.E.R. (G.C.R.)
N
REFERENCE TO SMALLER BUILDINGS, etc.
1 Staff Office
2 Bank
3 Ardath Tobacco Co.
4 Cyprus
5 Newfoundland
6 Canadian Pacific Railways
7 Canadian National ,,
8 Southern Rhodesia
9 Fire Station
10 London Electric Railways
11 Bermuda
12 Cinema
13 Sierra Leone
14 Native Village
15 Palestine
16 W. Indies & Atlantic Group
17 British Guiana
A Bars and Canteens
R Restaurants and Tea Rooms
Scale of feet
0 400 800



On the new loop line an LNER train approaches the Exhibition station behind ex-GER N7 0-6-2T No.997E. The slightly incongruous background includes a recreation of Old London Bridge, as well as the turrets on the Indian Pavilion. Just visible above the locomotive are cars of the 'Never-stop Railway. (Author's Collection)

this was not achieved: in the first season, between 23rd April and 1st November 1924, there were 18 million visitors and in the second, from 9th May to 31st October 1925, only 9 million. Like almost every such event (but not the Great Exhibition of 1851) the eventual financial outturn was disappointing and the Government, which had guaranteed the enterprise, was left with a substantial loss. Sadly, the second – and last – Empire Exhibition, in Glasgow in 1938, was equally unremunerative.

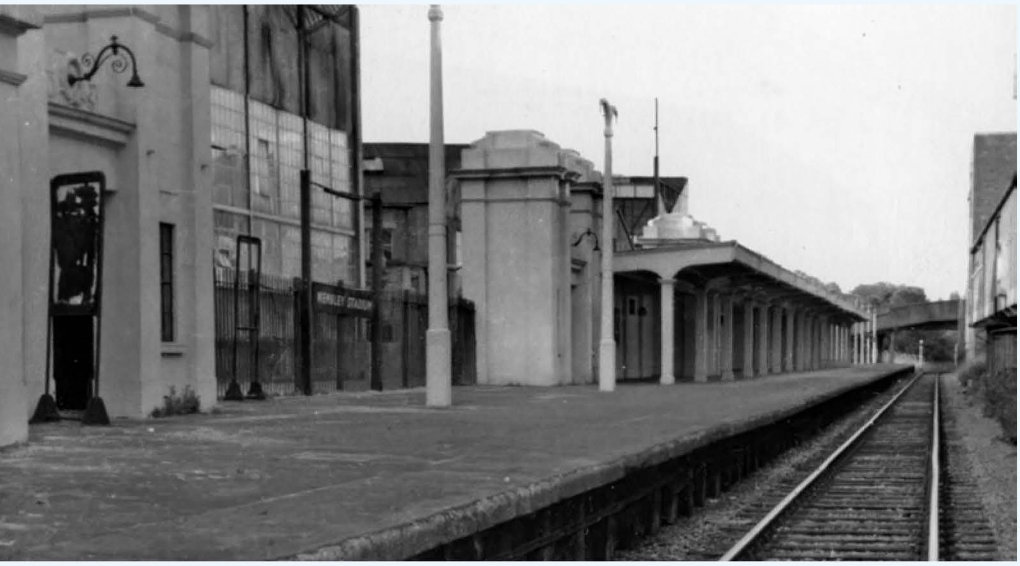
There was an Amusement Park to one side of the site and many restaurants and cafés to suit individual means and tastes. Catering was contracted to J. Lyons & Company, then the leading High Street caterer. Indian cuisine, then little known at home, was also available within their Pavilion, in conjunction with the best-known Indian restaurant, Veeraswarmy & Co. of Regent Street. Throughout the two seasons musical performances were staged in the Stadium, as well as military tattoos and air displays.

The railway contribution

The Exhibition was associated with the Metropolitan Railway (MetR) from the start, because the initial development of Wembley Park as a leisure and entertainment venue was undertaken by the entrepreneur Sir Edward Watkin, beginning in 1894. The plans included construction of a tower to rival the Eiffel Tower, but that was never completed beyond the first stage. The Metropolitan Railway, of which Watkin was a director, was not directly involved in the project but stood to benefit from it and lent the Wembley Park Estate Company funds. The choice of the exhibition site was influenced by its excellent railway connections, from central London and the rest of Great Britain, and sale of most of the remaining Park to the Exhibition company enabled the MetR to recover its outstanding loan. Although road transport was expected to play its part it was railways – now as then – that would bear the brunt. Let's look at what stations and services were available in 1924, listed in the table below.

Name in 1924	1924 operating company	2024 Name
Wembley for Sudbury	LMSR and Bakerloo	Wembley (Central)
Wembley Park	Metropolitan	Wembley Park
Wembley Hill	LNER	Wembley Stadium
Exhibition Station	LNER	Closed 1968

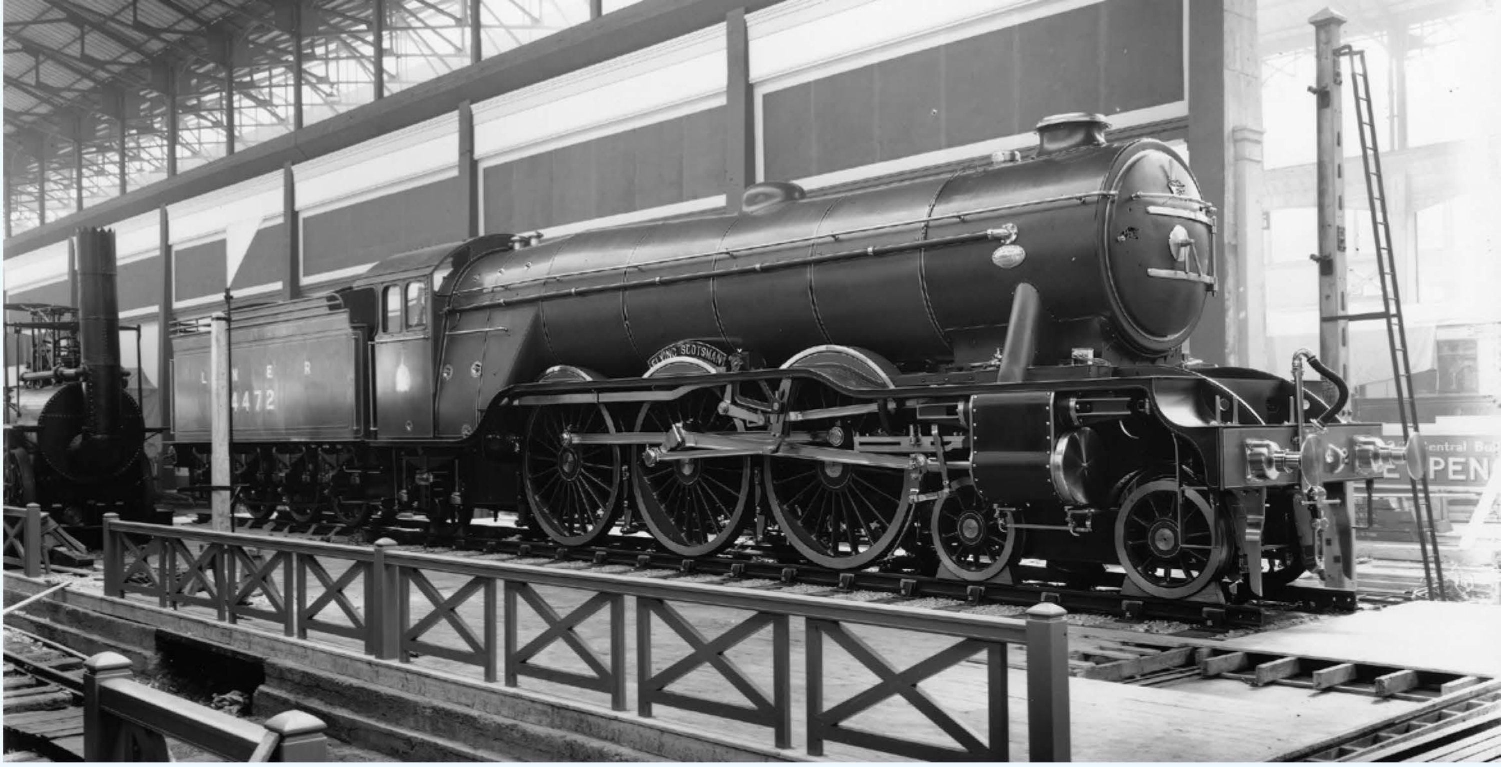
This view of the Exhibition Station was taken towards the end of its life and shows its very basic features. (Author's Collection)



Wembley for Sudbury was the oldest station in the area, opening in 1842 on the London & Birmingham main line. Showing the minor status of Wembley itself, the station was named 'Sudbury' for its first 40 years after a far older township. Its four main line platforms were served by stopping trains out of Euston and Broad Street, but an additional pair of tracks had been opened on the down side, used from 1917 by Bakerloo Line electric trains. These offered seamless journeys from central and south London and the station was a few minutes' walk from the Exhibition entrance.

Wembley Park station was opened for public traffic by the Metropolitan Railway in 1893 and was closely related to the prospective development of the Park as a popular resort. Always alert to traffic opportunities the MetR remodelled and enlarged the station to handle football traffic for the first Cup Final in 1923, as mentioned. For the subsequent exhibition further enlargements took place, providing four platform faces in the main station and two further terminating platforms east of the overbridge. A handsome new entrance building was created and staircases and passage-ways were enlarged, as were ticket offices. A new covered way led directly to the northern entrance to the Exhibition. Work was also undertaken at Baker Street to aid passenger flow and signalling between there and Wembley Park was reorganised to allow seventeen extra sections. MetR staff, and their successors down to the present day, became adept at crowd management and over the years successive annual events were efficiently managed – and also highly lucrative. In recognition of the extra work involved MetR staff were paid a significant weekly bonus and the Metropolitan reported that it handled 12.5 million extra passengers during the exhibition period in 1924. Cheap return tickets, including admission charges, were available from many Underground stations.

Wembley Hill was opened by the Great Central Railway (GCR) in 1906 on its new line between Neasden and Northolt. It is unlikely that it was much used by passengers from Marylebone for whom a handier alternative existed (see below) but it would have been useful for those originating further north on the Great Western & Great Central Joint Railway, including perhaps on excursion trains. It was conveniently located close to



The LNER proudly displayed No.4472 *Flying Scotsman* in all its glory, shown here during installation. On the far left can be seen *Locomotion* No.1, a fitting contrast. The second year of the Exhibition coincided with the centennial of the Stockton & Darlington Railway, as visitors were no doubt reminded. (Pendragon Collection)

the south side of the Exhibition.

'Exhibition Station' was the most interesting of the approaches to the Exhibition, although there is confusion regarding its official name: there were at least four between 1923 and 1926. It was by far the most prominent piece of transport infrastructure and the GCR had planned and built a loop line about a mile long, used in a clockwise direction leaving the GC main line just east of Wembley Hill station and rejoining it at Neasden. Its sole station was a simple concrete structure within the grounds, with a long concrete awning and distinctive lighting masts. It could accommodate nine suburban coaches. Nearby was the 'Never-stop railway', to be considered later, and above it loomed the slightly incongruous domes and minarets of the Indian Pavilion. Signalling on the line from Marylebone was improved with colour lights, allowing a three-minute frequency. For the first Cup Final in 1923 over 50 special trains ran from Marylebone and during the 1924 Exhibition season trains ran from Marylebone every ten minutes, with similar arrangements the following year. The loop and its station continued to thrive for later events, sporting and otherwise, until closure in 1968.

It is worth noting here that the London & North Eastern Railway also built sidings into the Exhibition, serving the Palace of Engineering and enabling the display of railway traction and rolling stock, as we shall see next.

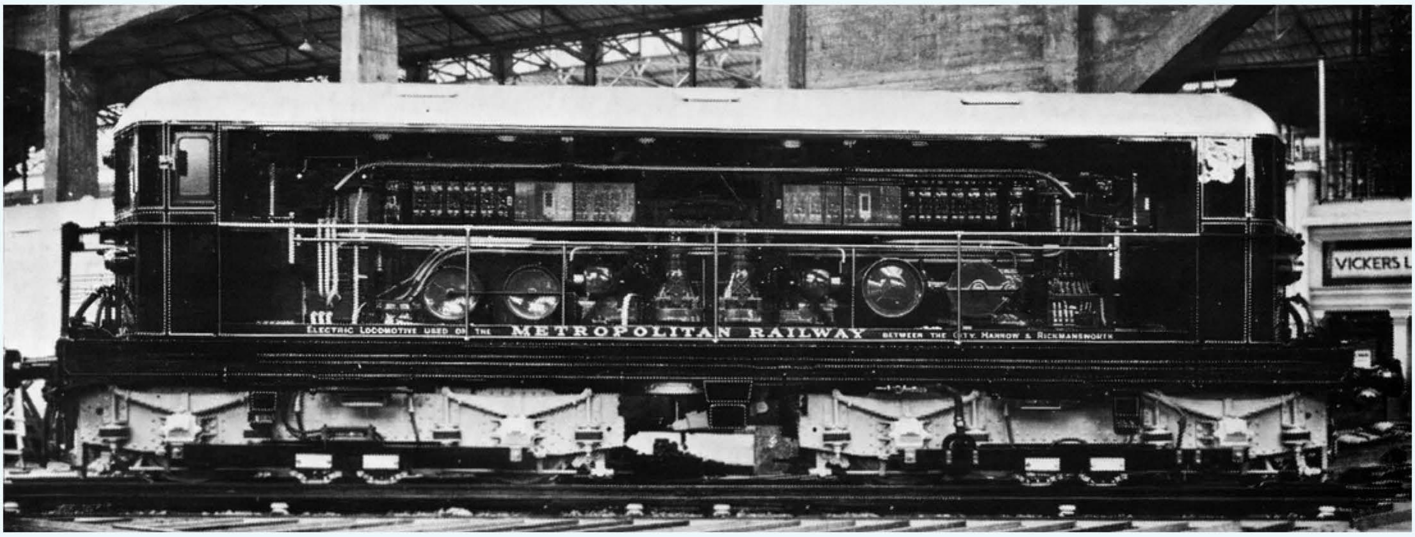
Railway exhibits

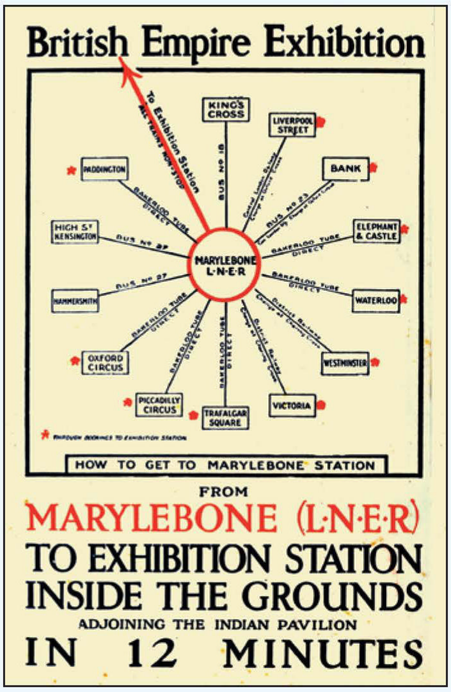
As railway engineering was then a major export business examples of new locomotives and rolling stock were shown in the Palace of Engineering. The 'Big Four' companies each had their own stand, where leaflets and brochures were available. Locomotives shown varied but amongst them were *Locomotion* No.1 from the Stockton & Darlington Railway together with LNER No.4472 *Flying Scotsman*. The GWR showed No.4073 *Caerphilly Castle* and the Southern its N Class mixed traffic locomotive No.866. There were displays of signalling and track and a model of the new Post Office railway. An electric locomotive built for export to Japan was on show, and amongst the most memorable items was Metropolitan Railway locomotive No.15, recently 'rebuilt' by Metro-Vickers. One side of the engine had been removed so that its internal equipment could be seen, with explanatory signs. The engine was later named *Wembley 1924*. Rolling stock included an LMSR dining car and a new Metropolitan Railway driving trailer. Amongst other railways represented were the CPR and CNR from Canada and also the railways of Ireland. In addition to their displays the railway companies had information kiosks around the site.

'Never Stop'

The extent of the Exhibition (it covered 216 acres) made internal transport advisable and the most memorable was a form of rail transport between the two main entrances, with three intermediate stops, one adjoining the LNER Exhibition Station. This was the unique 'Never-stop Railway', a marketing term for the 'Adkins-Lewis Rapid Varying Speed Continuous Transport System'

The Metropolitan was also an exhibitor, displaying its 'new' electric locomotive, displayed to reveal its inner workings.


ELECTRIC LOCOMOTIVE USED ON THE METROPOLITAN RAILWAY BETWEEN THE CITY, HARROW & RICKMANSWORTH
VICKERS L


British Empire Exhibition
To Exhibition Station
All trains non-stop
KING'S CROSS
LIVERPOOL STREET
PADDINGTON
BANK
BUS No 18
BUS No 23
BAKERLOO TUBE DIRECT
HIGH St KENSINGTON
BUS No 8F
ELEPHANT & CASTLE
MARYLEBONE L·N·E·R
BUS No 27
HAMMERSMITH
WATERLOO
OXFORD CIRCUS
WESTMINSTER
PICCADILLY CIRCUS
TRAFALGAR SQUARE
VICTORIA
District Railway
THROUGH BOOKINGS TO EXHIBITION STATION
HOW TO GET TO MARYLEBONE STATION
FROM
MARYLEBONE (L·N·E·R)
TO EXHIBITION STATION
INSIDE THE GROUNDS
ADJOINING THE INDIAN PAVILION
IN 12 MINUTES

One problem faced by the LNER was that Marylebone station was not well known compared with the historic stations and advertising sought to overcome this problem and to reassure visitors from the country. (John Alsop Collection)

(which should have formed a catchy acronym, but didn't). Demonstration lines had been operated previously at Ipswich and Southend-on-Sea. For the organisers it offered a reliable but novel ride, with a dose of advanced technology. The line, all double track, was 3,300 feet in length, some of it on raised viaducts where the silently-moving cars gave a vision of the future. The tracks consisted of two concrete way beams, a little under three feet apart. The individual cars, which operated singly, had small running wheels running along the top of each beam, and also horizontal wheels bearing on its sides, stabilising the operation. Each car seated 24 passengers. They were built by Garrett's of Leiston and the Baguley Company of Burton-on-Trent.

The defining feature of the system was a rotating shaft laid between and below the rails. The shaft moved at constant speed, driven by electric motors along the route. A spiral thread along the shaft was connected to the cars by rollers beneath each car. The spiral varied in pitch, from very fine near stopping places to very coarse between them. As each car approached a stop its speed fell and along each platform the car barely inched forward. There were uniformed attendants at each stop to offer guidance, and there were presumably measures to stop the shaft in the event of mishap. It isn't clear from reports how cars were put into, and out of, service as pointwork was obviously impractical. Film of the system in operation can be viewed on-line [see: https://www.youtube.com/watch?v=EX_MIWL7YKM].

In addition to the 'Never-stop' there was also a fleet of battery-powered trolleys (more familiar now as 'golf buggies') as well as another innovative system, developed in South Africa, comprising 'road-rail' tractors where the cars were guided by a single rail with carrying wheels on outriggers. A sign of the times: there were 'motor parking grounds' for those with personal transport.

In the aftermath of the Exhibition the merits of the 'Never-stop' system were extravagantly publicised and somewhat wild assertions were made of the ease with which the Paris Metro and the London Underground could be converted, offering higher speeds and capacity of 30,000 passengers an hour, though both claims are open to doubt, to say the least.

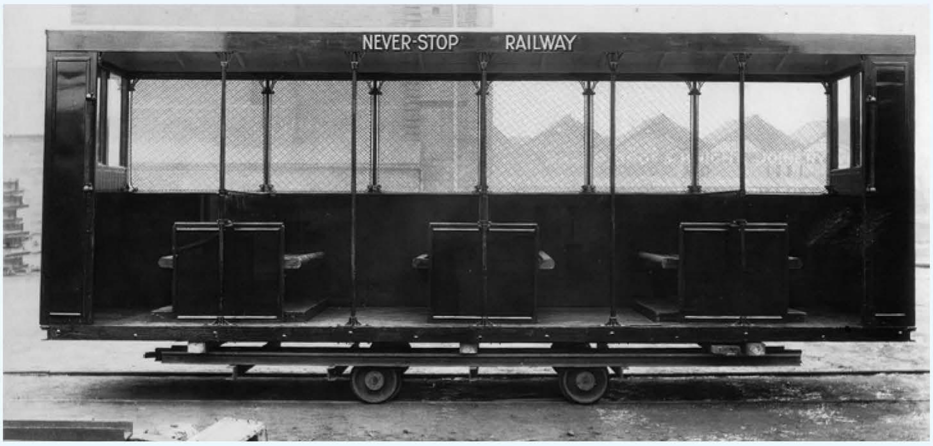
By tram and bus to Wembley Park

Lastly, let us glimpse another form of railed transport, the electric tramway. In 1923 the vast London tram network was nearing its fullest extent and it would be eight years before substantial abandonment began. The Wembley site was served by one line of the Metropolitan Electric Tramways (an affiliate of the Underground Group), which ran along Harrow Road, close to the south west Entrance. Some minor preparatory work had been undertaken in anticipation of Exhibition traffic, but this fell far short of the new construction built, for instance, in Brussels in 1935 and 1958, and in Hannover in 1947. Normally three tram services used the line, providing 30 trams an hour. These ran from Paddington Green, handy for main line and Underground connections. (There were no tramways in Central London.) Two extra services were introduced for the Exhibition and the trams carried special signs reading 'Empire Exhibition Car'. There were also many special workings from as far away as Tottenham, operated by the largest London operator, the London County Council Tramways. Many of these were for school or similar parties and the LCC also ran a special Exhibition tram service through from Putney, a distance of over fifteen miles.

If there were only minor changes to tramways, the same was not true of London General bus services, also owned by the Underground Group. Seventeen routes served the Exhibition, from as far away as Lewisham and Wimbledon, most at intervals of six to ten minutes. Notably a complete bus station was built on a two-acre site adjoining the south west entrance, one of the first of its kind. It had five stands, each assigned to particular services and with attractive canopies. A travel enquiry bureau was provided nearby. Bus stops across London, served by Exhibition routes, were marked with special blue signs.

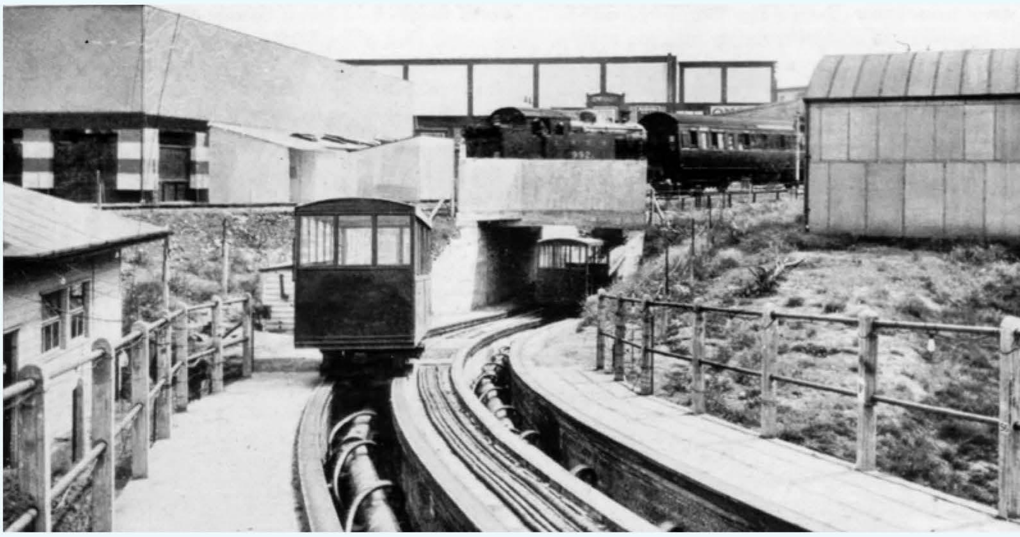
A lost Empire

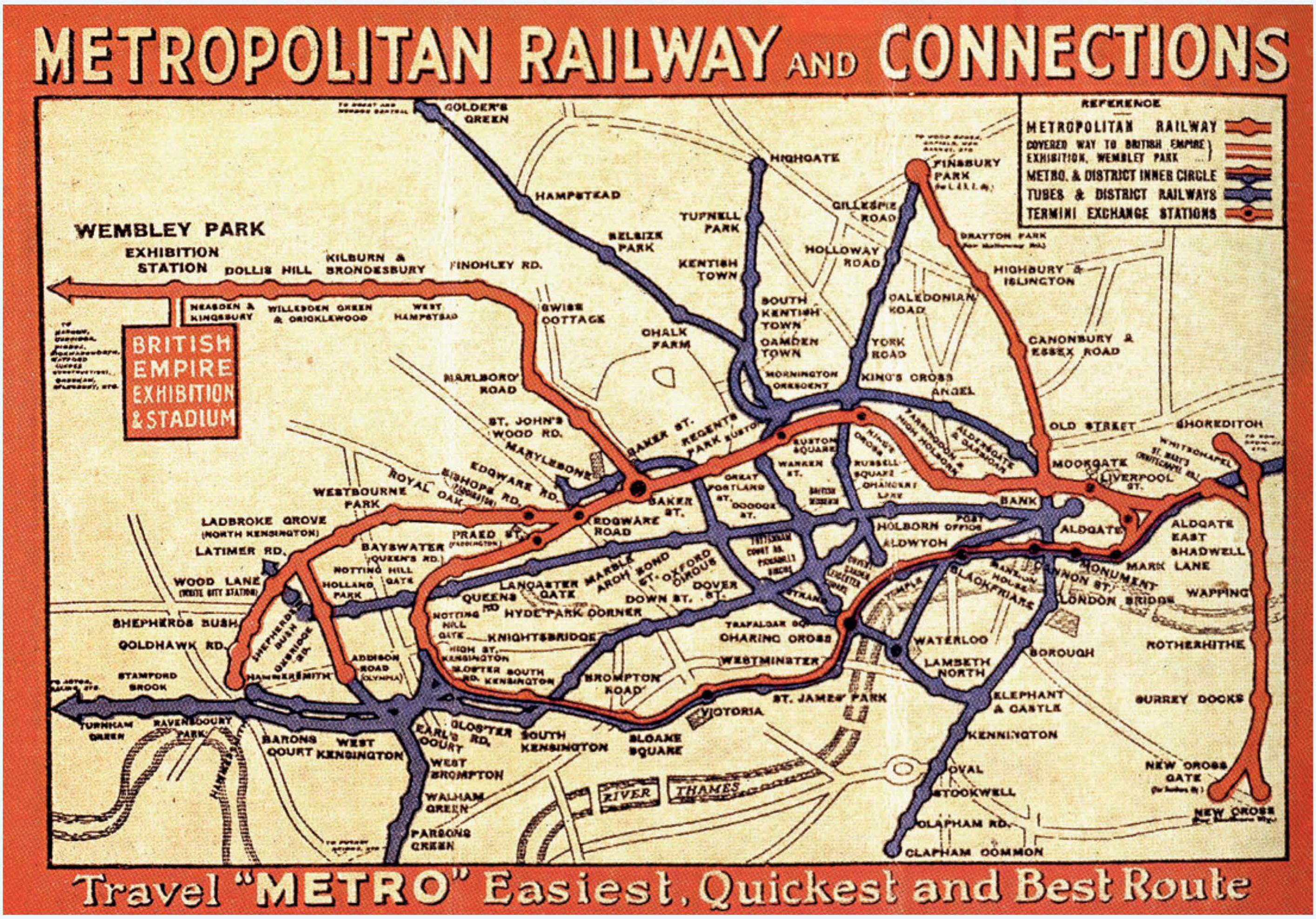
And so we come to the end of the story, with the speeches and ceremonial which marked the closure of the Exhibition. Many of the 27 million visitors cherished


NEVER-STOP RAILWAY

The carriages of the 'Never-stop Railway' were somewhat flimsy and although its promoters claimed it could replace the tube railways that seems unlikely. (Author's Collection)

The essential feature of the 'Never-stop Railway' was its track and propulsion equipment shown here. (Author's Collection)

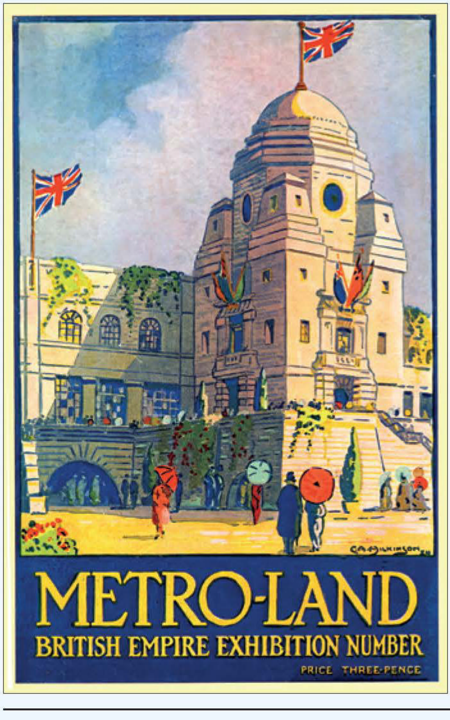



METROPOLITAN RAILWAY AND CONNECTIONS
REFERENCE
METROPOLITAN RAILWAY
COVERED WAY TO BRITISH EMPIRE EXHIBITION, WEMBLEY PARK
METRO. & DISTRICT INNER CIRCLE
TUBES & DISTRICT RAILWAYS
TERMINI EXCHANGE STATIONS
WEMBLEY PARK
EXHIBITION STATION
DOLLIS HILL
KILBURN & BRONDESBURY
FINCHLEY RD.
NEASDEN & KINGSBURY
WILLESDEN GREEN & CRICKLEWOOD
WEST HAMPSTEAD
BRITISH EMPIRE EXHIBITION & STADIUM
GOLDER'S GREEN
HAMPSTEAD
BELSIZE PARK
CHALK FARM
TUFNELL PARK
KENTISH TOWN
HIGHGATE
SWISS COTTAGE
MARLBORO' ROAD
ST. JOHN'S WOOD RD.
MARYLEBONE
EDGWARE RD.
BISHOPS RD.
ROYAL OAK
WESTBOURNE PARK
LADBROKE GROVE (NORTH KENSINGTON)
LATIMER RD.
WOOD LANE
SHEPHERDS BUSH
GOLDHAWK RD.
HAMMERSMITH
STAMFORD BROOK
TURNHAM GREEN
RAVENSCOURT PARK
BARONS COURT
WEST KENSINGTON
EARL'S COURT
WEST BROMPTON
WALHAM GREEN
PARSONS GREEN
ADDISON ROAD
PRAED ST.
BAYSWATER
NOTTING HILL GATE
HOLLAND PARK
QUEENS RD.
LANCASTER GATE
MARBLE ARCH
BOND ST.
OXFORD CIRCUS
HYDE PARK CORNER
KNIGHTSBRIDGE
HIGH ST. KENSINGTON
GLOSTER ROAD
SOUTH KENSINGTON
SLOANE SQUARE
BROMPTON ROAD
DOWN ST.
DOVER ST.
VICTORIA
ST. JAMES' PARK
WESTMINSTER
CHARING CROSS
TRAFALGAR SQ.
BAKER ST.
REGENTS PARK
GREAT PORTLAND ST.
EUSTON SQUARE
WARREN ST.
GOODGE ST.
CAMDEN TOWN
SOUTH KENTISH TOWN
MORNINGTON CRESCENT
KING'S CROSS
RUSSELL SQUARE
HOLBORN
ALDWYCH
TEMPLE
BLACKFRIARS
MANSION HOUSE
CANNON ST.
MONUMENT
LONDON BRIDGE
BANK
POST OFFICE
ALDGATE
ALDERSGATE
FARRINGDON
MOORGATE
LIVERPOOL ST.
OLD STREET
SHOREDITCH
WHITECHAPEL
ALDGATE EAST
SHADWELL
MARK LANE
WAPPING
ROTHERHITHE
SURREY DOCKS
NEW CROSS GATE
NEW CROSS
WATERLOO
LAMBETH NORTH
BOROUGH
ELEPHANT & CASTLE
KENNINGTON
OVAL
STOCKWELL
CLAPHAM RD.
CLAPHAM COMMON
ANGEL
YORK ROAD
CALEDONIAN ROAD
HOLLOWAY ROAD
GILLESPIE ROAD
FINSBURY PARK
DRAYTON PARK
HIGHBURY & ISLINGTON
CANONBURY & ESSEX ROAD
RIVER THAMES
Travel "METRO" Easiest, Quickest and Best Route

No-one could accuse the MetR of impartiality in its advertising and this is a perfect instance. The Bakerloo Line disappears altogether beyond Edgware Road. The company was trying to establish itself as a 'Metro', aspiring perhaps to the distinctive glamour of Paris, but ultimately without success.

happy recollections for the rest of their days, although anecdotes suggest that most were more thrilled by the replica of Tutankhamun's Tomb, the 'Never-stop Railway' and the novel dodgem cars in the funfair than they were by earnest accounts of crop-yields and forest products. Did it succeed in its primary task, to stimulate and consolidate support for the Empire? Sadly, not: there was no evidence of growing Imperial trade. Nonetheless Great Britain supplied for another 30 years a huge overseas market for locomotives and other railway material, but as independent nations developed their own manufacturing industry or turned to suppliers, notably the United States, which demonstrated mastery of diesel traction as Britain did not, that eventually waned. Symptomatic of decline was the liquidation in 1962 of the great North British Locomotive Company, which had once supplied most of the Empire.

The MetR was, uniquely amongst UK railways, a property developer as well as a purveyor of transport and it seized the huge opportunity of serving millions of visitors to promote its estates in 'Metroland'.


METRO-LAND
BRITISH EMPIRE EXHIBITION NUMBER
PRICE THREE-PENCE
C.A. Wilkinson

The 'imperial' facilities at Wembley Park had one last hurrah: the first post-war Olympic Games were staged at Wembley in the summer of 1948, with additional facilities at Wembley Park station to handle the crowds. A mighty reminder today of the Exhibition, and the Olympiad, is Wembley Stadium, rebuilt in 2007 on the site of the old, where many times each year something of the jovial spirit of 1924 is revived, although most of those present will know nothing about the Exhibition, or indeed about the Empire, so totally has it been erased from current awareness.

On major sporting occasions the railways, impressively and seemingly without effort, handle the crowds with the procedures established a century ago.

We can now see that the Exhibition lay at a crossroads in Imperial history. In 1919 the Empire reached its greatest extent, with the occupation of former German and certain Ottoman territories. But in 1922 the first retreats began, with Egypt declaring independence and the first tortuous steps towards the independence of the Irish Free State. The onset of the Depression in 1929 began a spate of railway closures at home and economies overseas. The optimism of the Exhibition never returned.

Suggestions for further reading

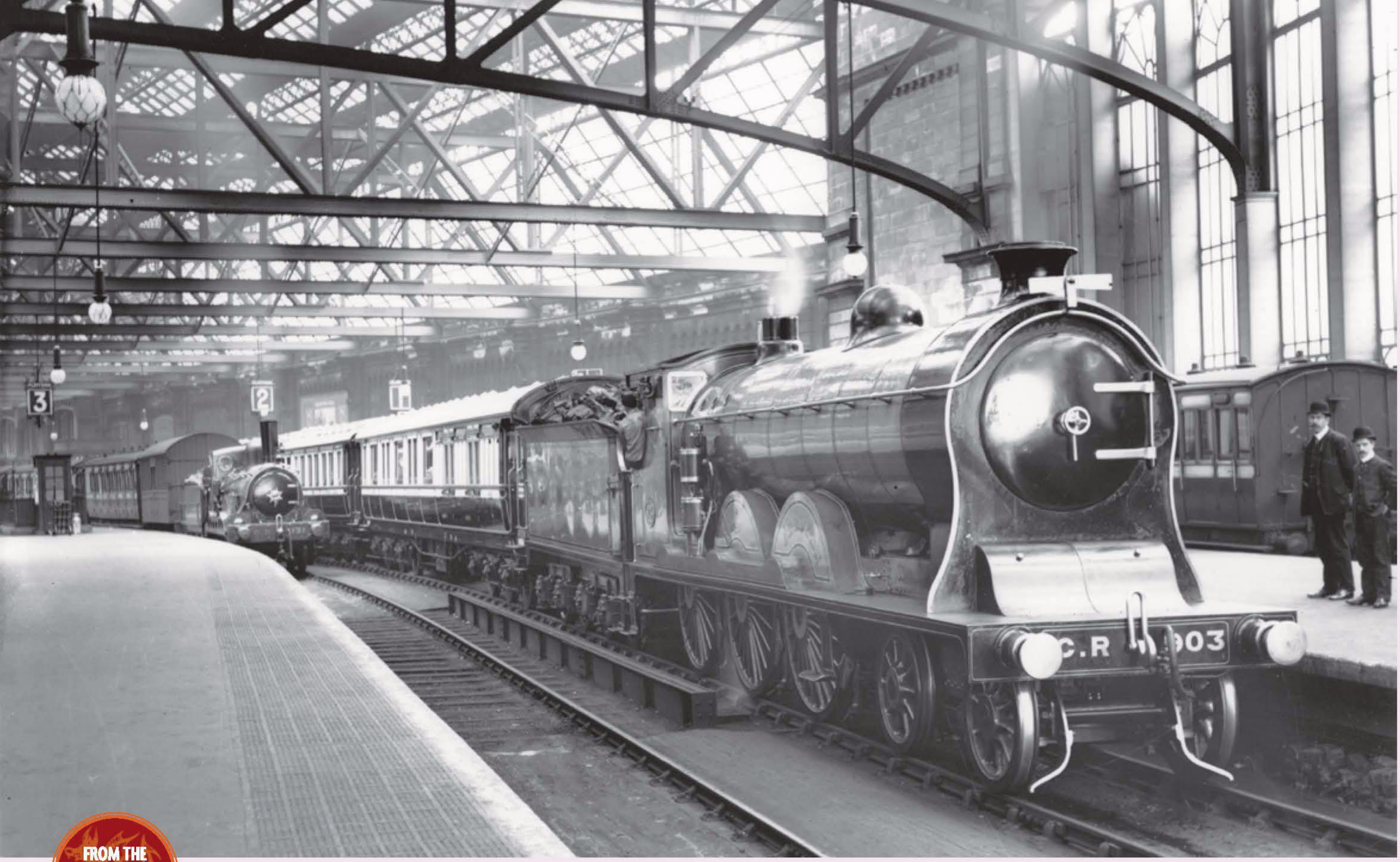
London's Metropolitan Railway by the doyen of London historians, Alan A. Jackson, is the finest introduction and includes much information about the doomed development of Wembley Park and of the Railway's preparations for the Exhibition.

Perhaps the best personal account of the Empire is by Jan Morris: *Farewell The Trumpets: An Imperial Retreat, 1897–1965.* It includes an account of the Exhibition.

Piers Brendon's history *The Decline and Fall of the British Empire* looks at Empire and Exhibition from a different point of view.

On the Great Central's attentions to Wembley, including the specially-built loop, see Stanley C. Jenkins's *The Great Western and Great Central Joint Railway.*

Special thanks to Dr. Martin Dibbs for assistance with sources, Bernard Dawson for advice on Empire trade and John Alsop for help with illustrations.

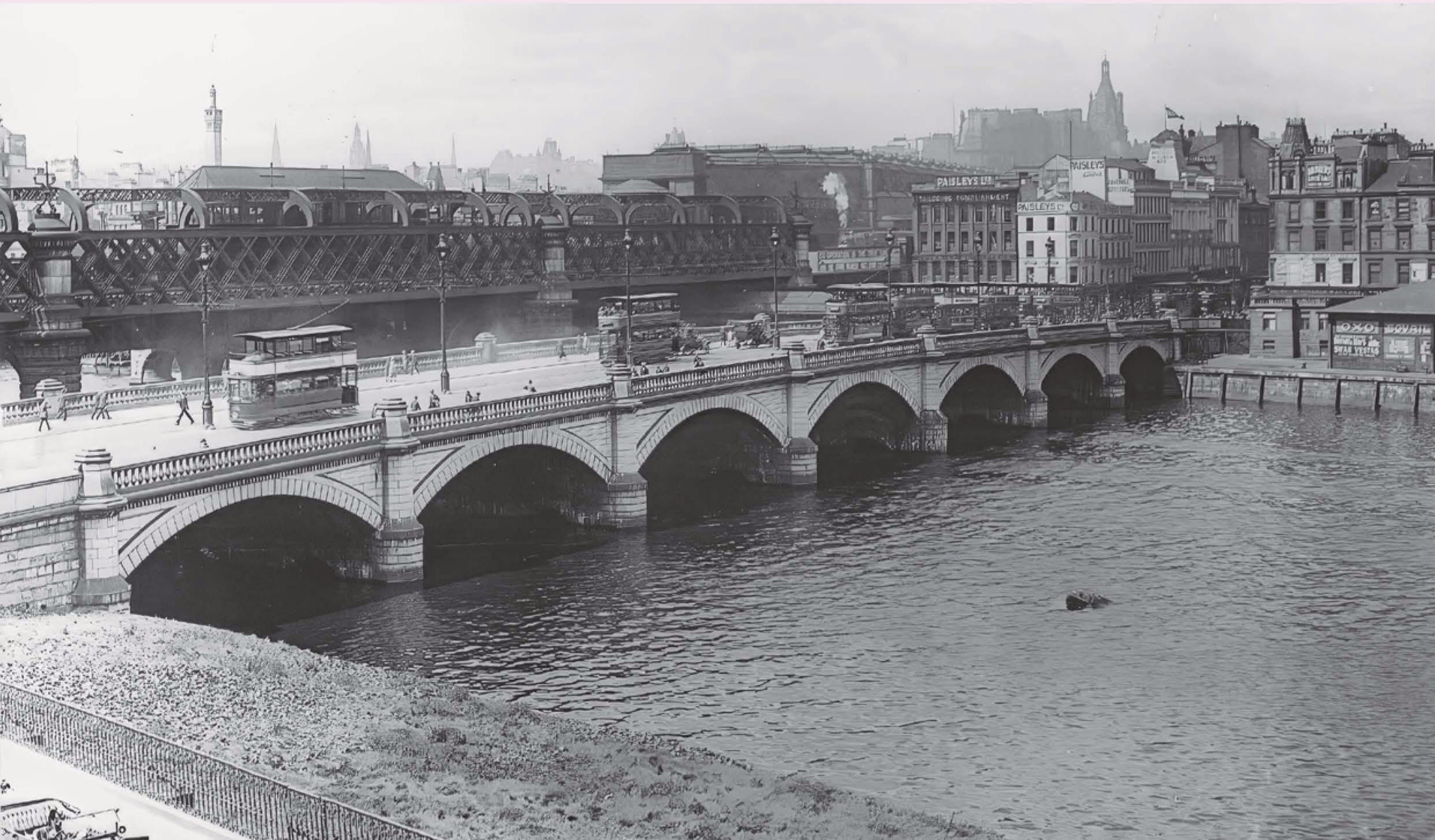


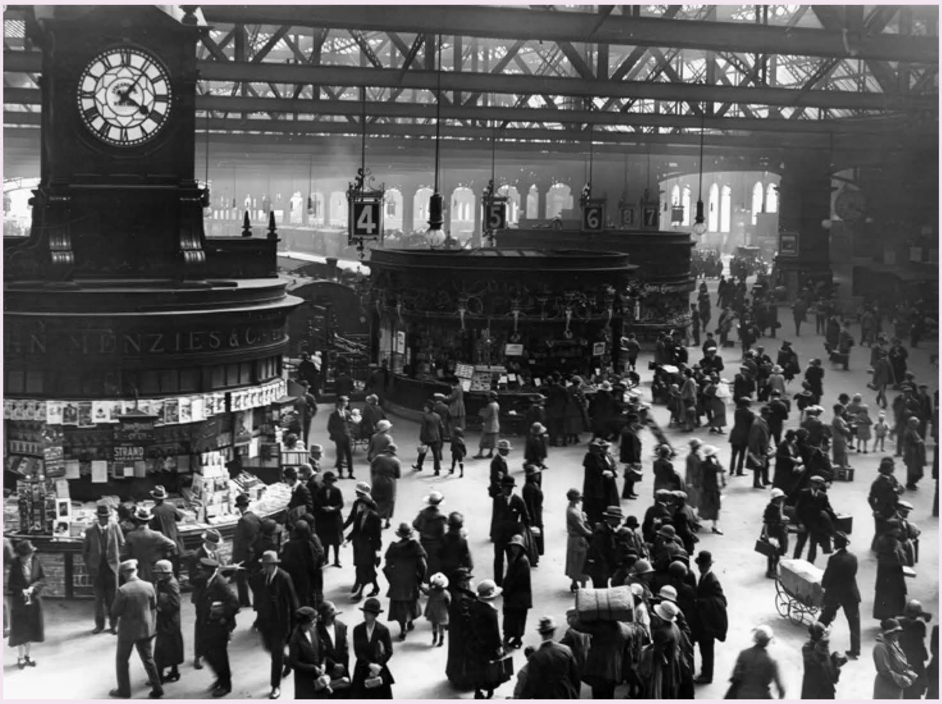
FROM THE PENDRAGON ARCHIVES

GLASGOW CENTRAL

ABOVE: **The Caledonian Railway's Glasgow Central terminus dates from 1879 when the railway had crossed the River Clyde and was extended in 1905 to create one of the best-designed terminal stations in Britain. This superb photograph is well known and has appeared in *BT* before – but it is far too good not to be included in any pictorial study of Glasgow Central. 4-6-0 No.903 *Cardean* (built at St. Rollox Works in 1906) stands grandly at the head of the West Coast Joint Stock on the 2.00pm 'Corridor' to London Euston. The small engine at the next platform is '130' Class 2-4-0 No.131, a George Brittain design from 1878 which lasted until 1917.**

BELOW: **Looking across the Clyde to the two bridges carrying the CR lines into Central station. The amount of traffic had increased to the extent that the CR was obliged to add a second bridge in 1906 alongside the original, by which time the station had thirteen platforms. Corporation trams are crossing the Glasgow (or Jamaica) Bridge, while dominating the area between the station and the bridge are the premises of Paisley's Ltd., a renowned local tailoring and general outfitters' emporium (and supplier of school uniforms!).**

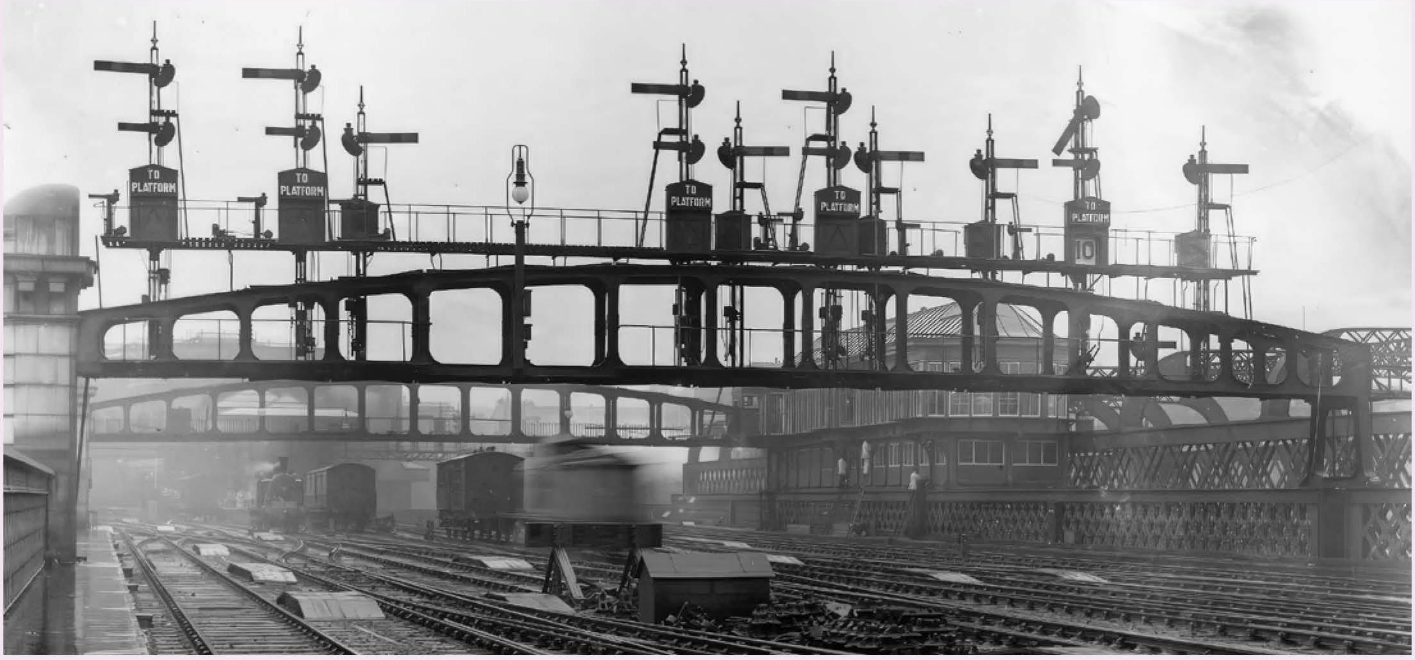



4
5
6
7
MENZIES & C
STRAND

LEFT: **Glasgow Central is noted for its spacious circulating area and according to a study of the station in *The Railway Magazine* in 1923 about six million passengers a year were booked through it. And all Glasgow life is here...**

BELOW: **The approach to the station across the bridges on which was carried the one signal box controlling the station area. The signalling was electro-pneumatic on the Westinghouse Brake and Saxby Signal Co. system. The signals are provided with a route indicator for each platform, along with a shunting arm below the main signal.**

BOTTOM: **The platforms passed over Argyle Street where there was an entrance on the eastern side of the station. The covered area was a meeting place familiarly known as 'The Hielanman's Umbrella'. A Glasgow Corporation 'Coronation' tram is passing under an advertisement from which a large 'N' has dropped off!** (T. J. Edgington)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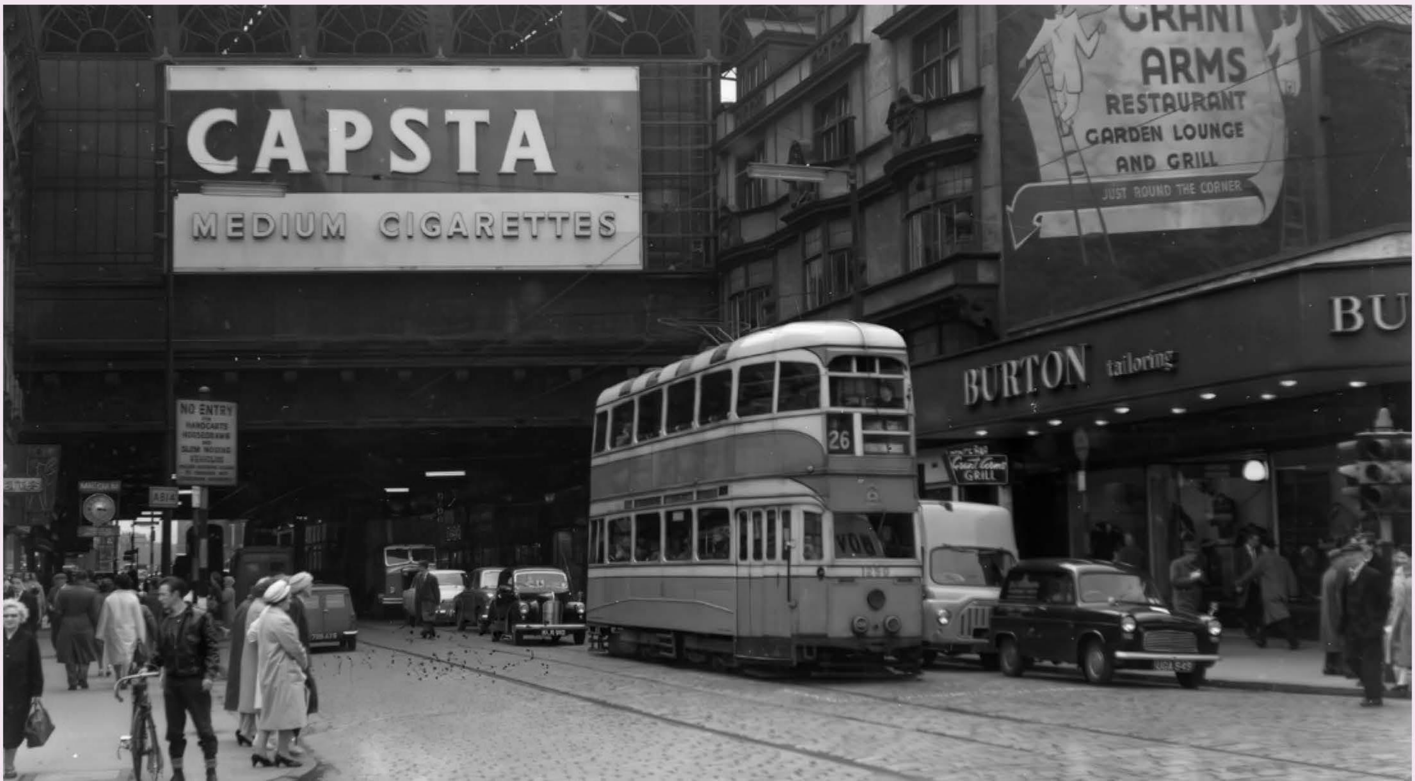
CAPSTA
MEDIUM CIGARETTES
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AND GRILL
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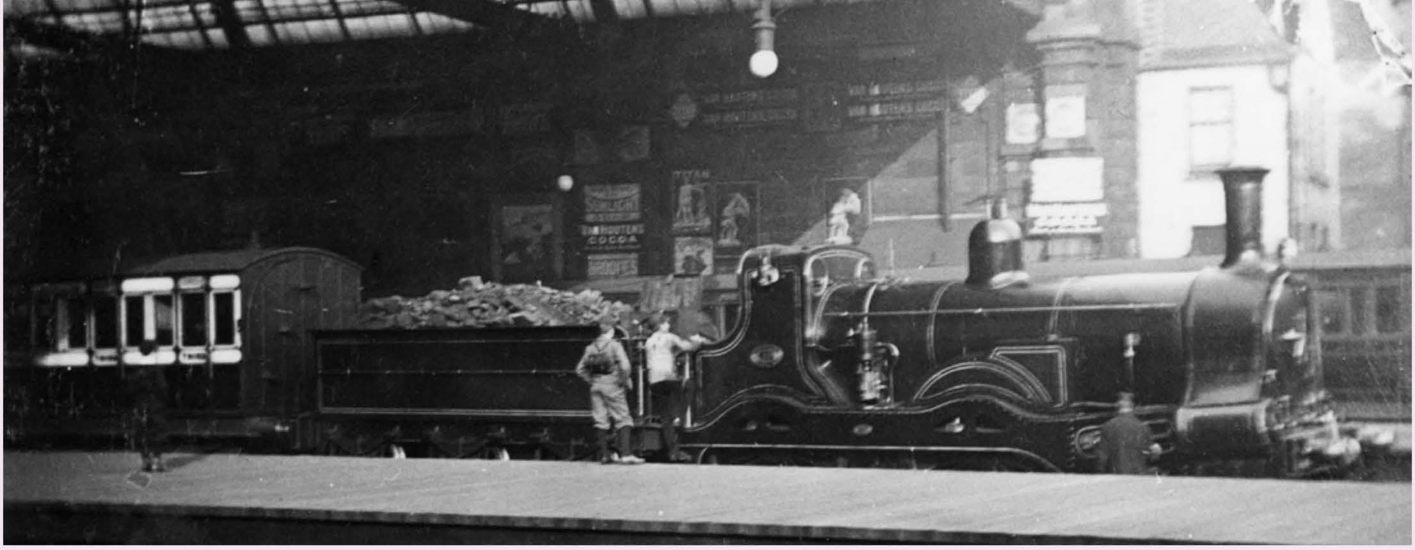
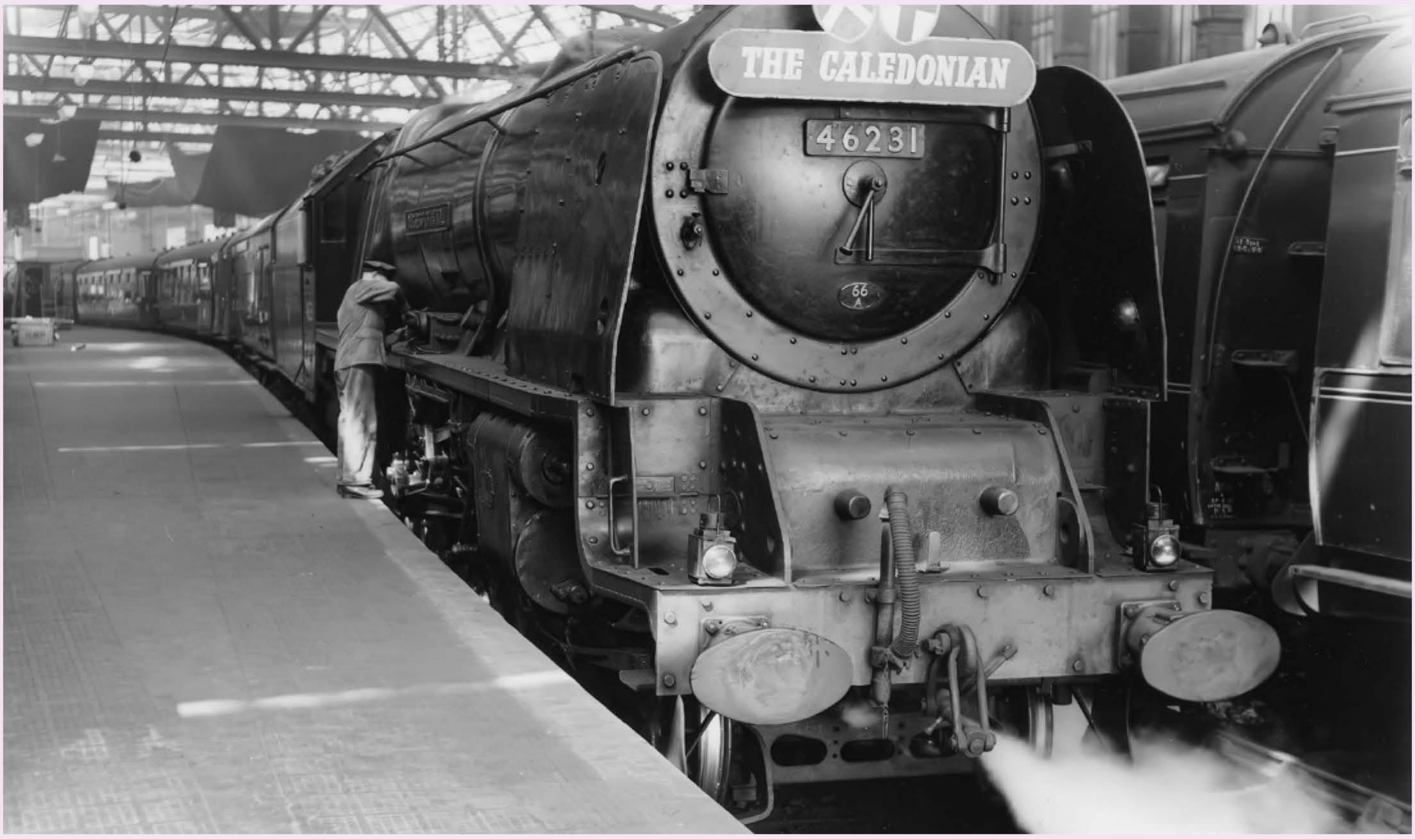
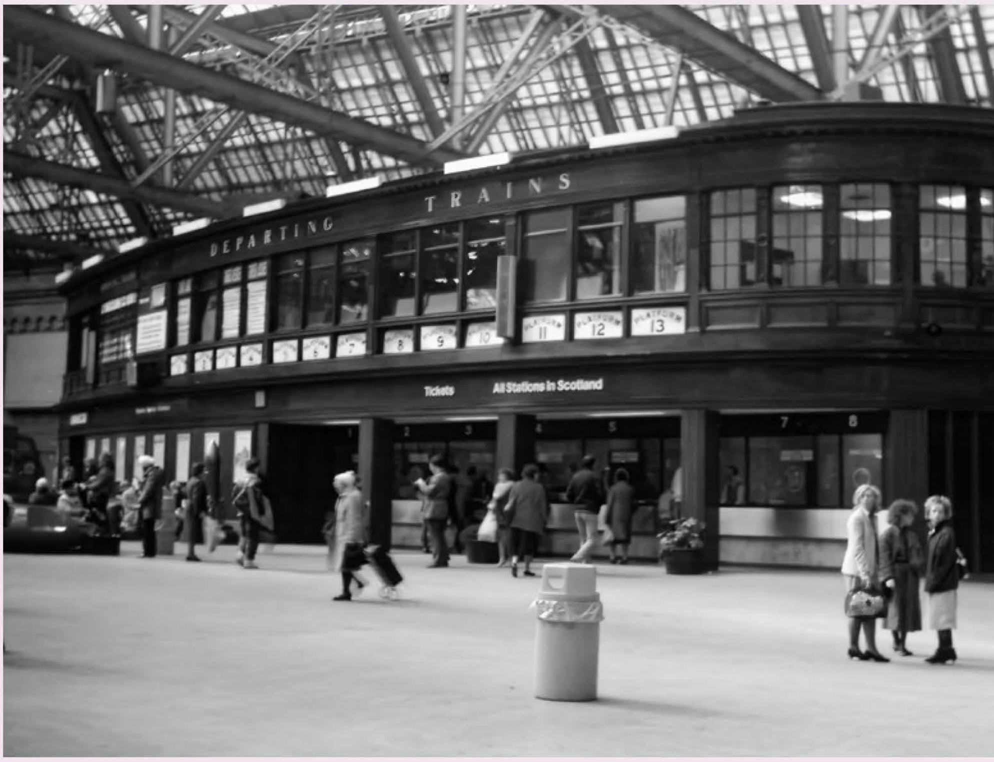


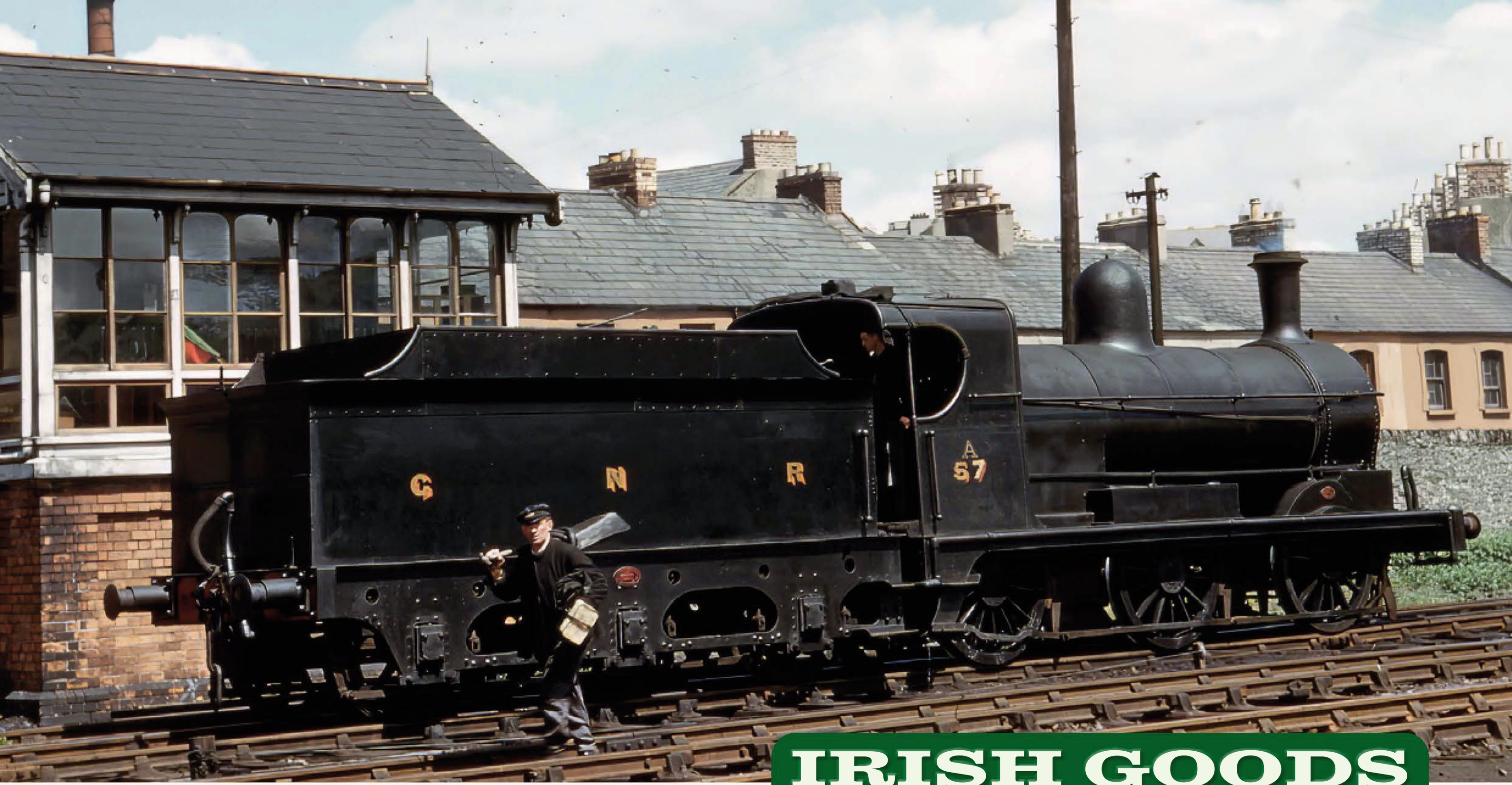




TOP: **Glasgow Central on 22nd September 1892. Connor '417' Class 2-4-0 No.476 (built 1867) is on the 4.05pm to Edinburgh, with the driver down on the track between engine and platform for a bit of last-minute oiling and a couple of chaps trying for the cab.** (T. J. Edgington Collection)

ABOVE: **Sixty-six years on and the driver of LMS 'Coronation' Pacific No.46231 *Duchess* of *Atholl* is giving it that final attention before the 4.00pm departure on the fast 'Caledonian' to London Euston on 11th July 1958.** (T. J. Edgington)

RIGHT: **Perhaps the most distinctive feature of the station concourse, seen here on 3rd April 1984, was the oval building containing booking and information offices on the ground floor and above them departures display boards which were manually positioned. The latter were replaced by electro-mechanical screens in 1985 and a new travel centre was provided, with the old building being retained and given over to shops and catering. A new bar at the upper level is expected to open this year.** (Paul Aitken)

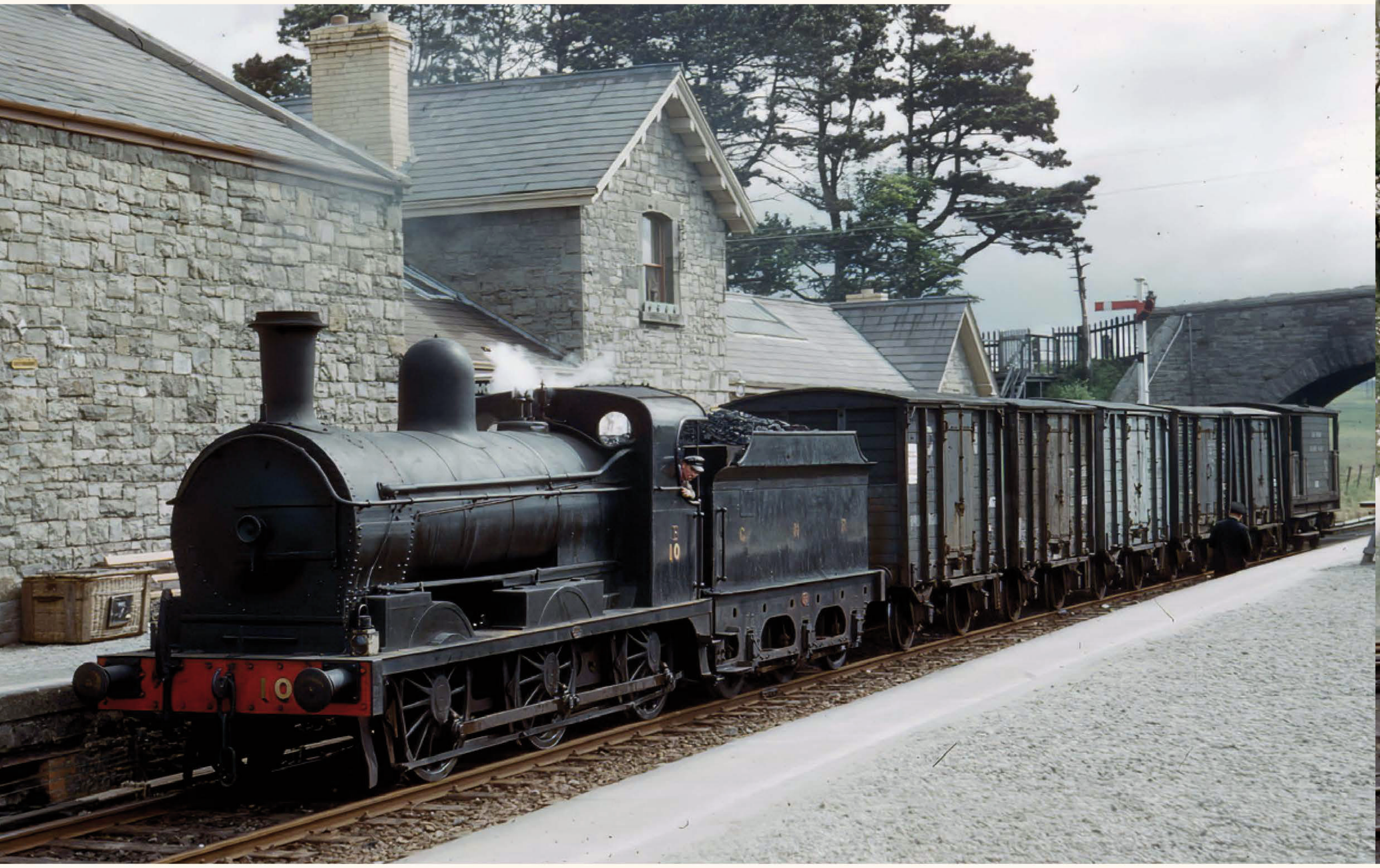


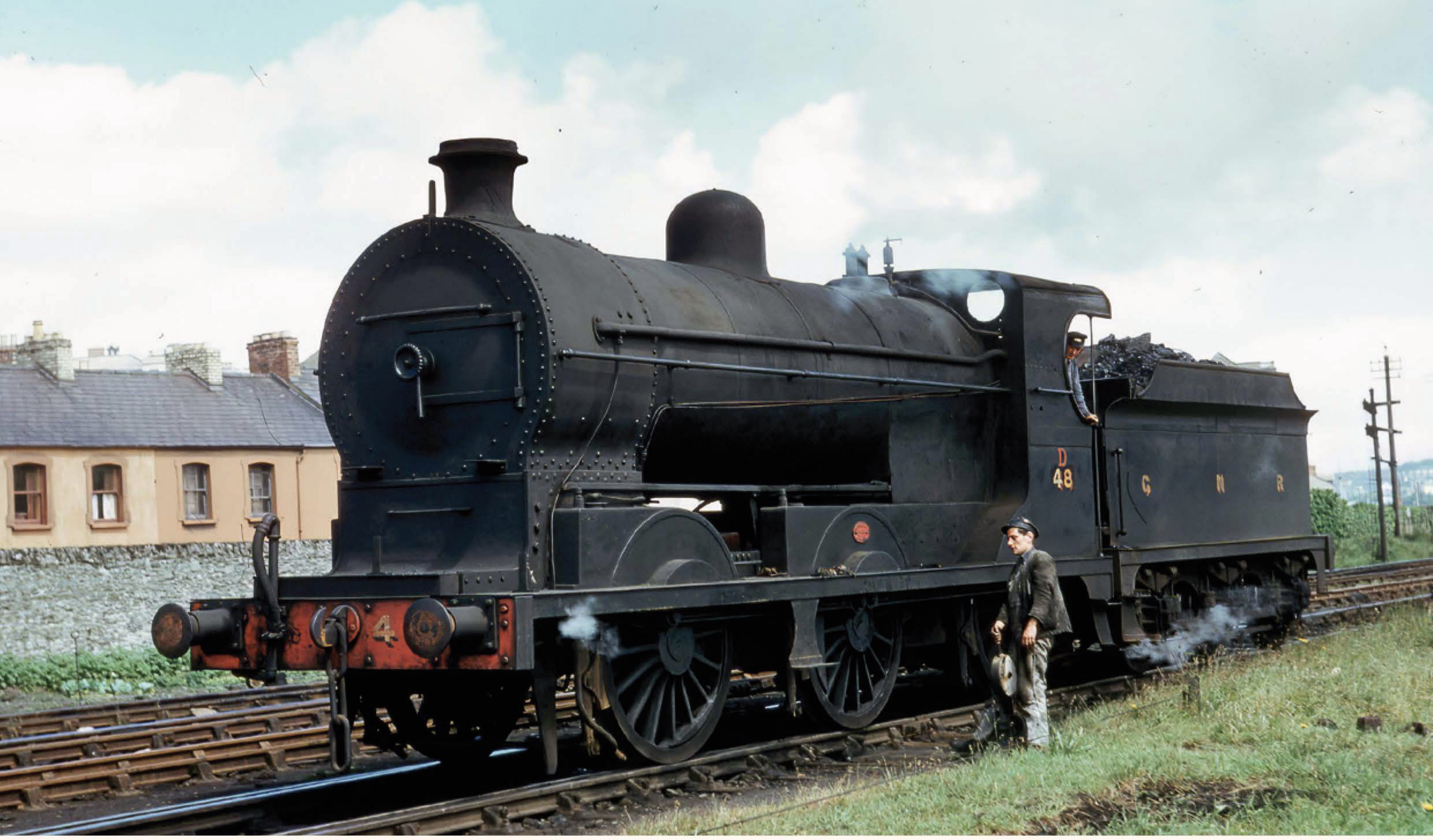
IRISH GOODS

With a very few exceptions – including a couple of massive 4-8-0s on the narrow gauge – the 'standard' Irish goods engine was the 0-6-0. This selection features a variety of locomotives, ancient and (slightly more) modern. Captions by **DAVID MOSLEY**

ABOVE: **In 1908 the Great Northern (Ireland) introduced an alphabetical power classification for its six-coupled tender engines. For the information of all concerned the classification, a cast iron upper case letter, painted red, was fixed above the running number. By 1957 No.57, seen here at Londonderry, had lost its cast letter but still displayed the classification 'A'. GN (I) Class AL No.57 was built by Beyer, Peacock & Co. in December 1895 and originally named *Cork*. The locomotive was transferred to the Córas Iompair Eireann (CIE) in 1959 and withdrawn in October 1959.** (Colour-Rail.com FIE05828)

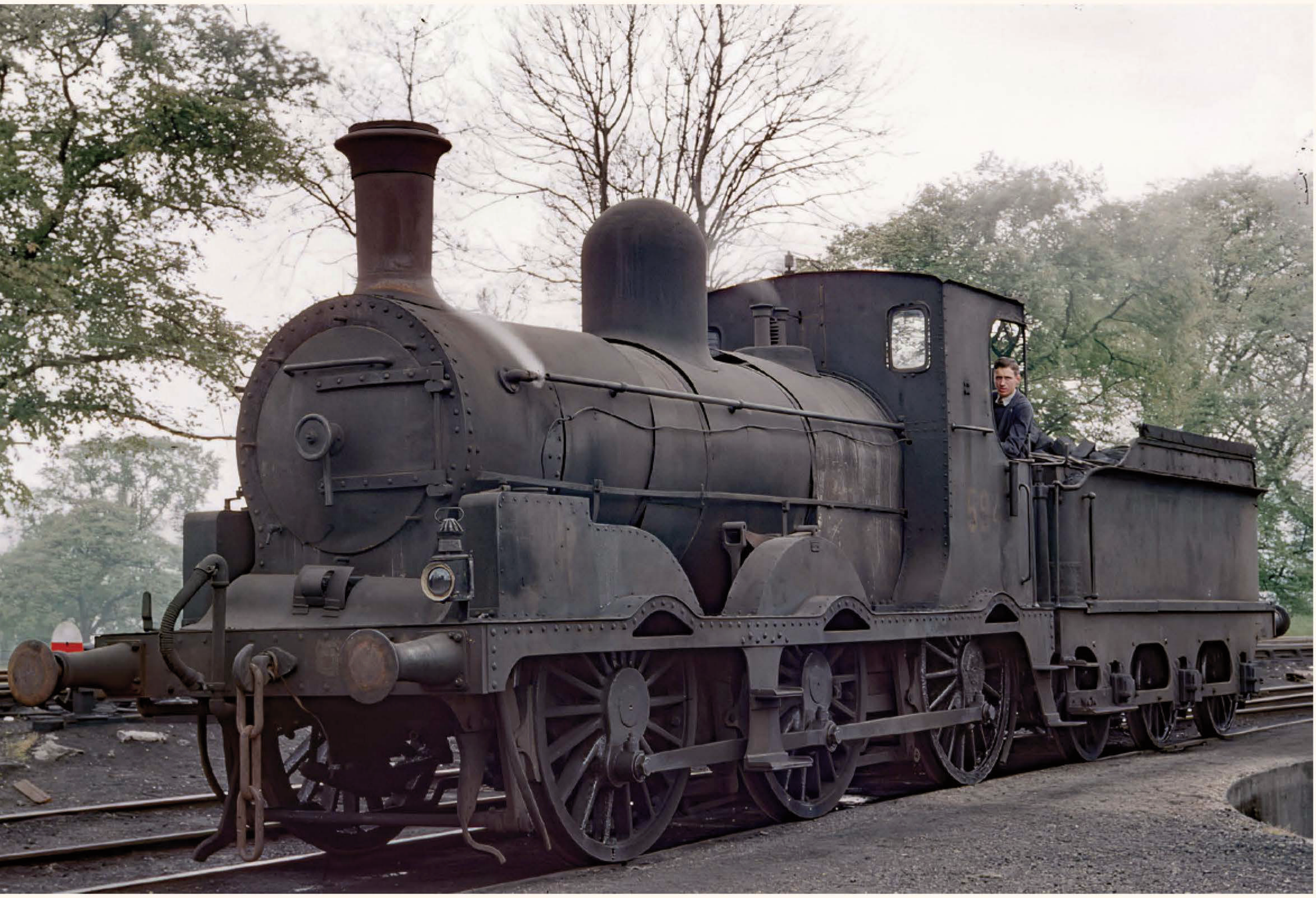
BELOW: **What a delightful photograph! GN (I) Class PG No.10 stands with a beautifully balanced train at Ballyshannon in June 1957. The locomotive retains the power classification 'B' on the cab side. No.10 was built at Dundalk in 1904 and was originally named *Bessbrook*. The locomotive passed to the Ulster Transport Authority in1958 and was withdrawn from service in 1964.** (Colour-Rail.com FIE05829)

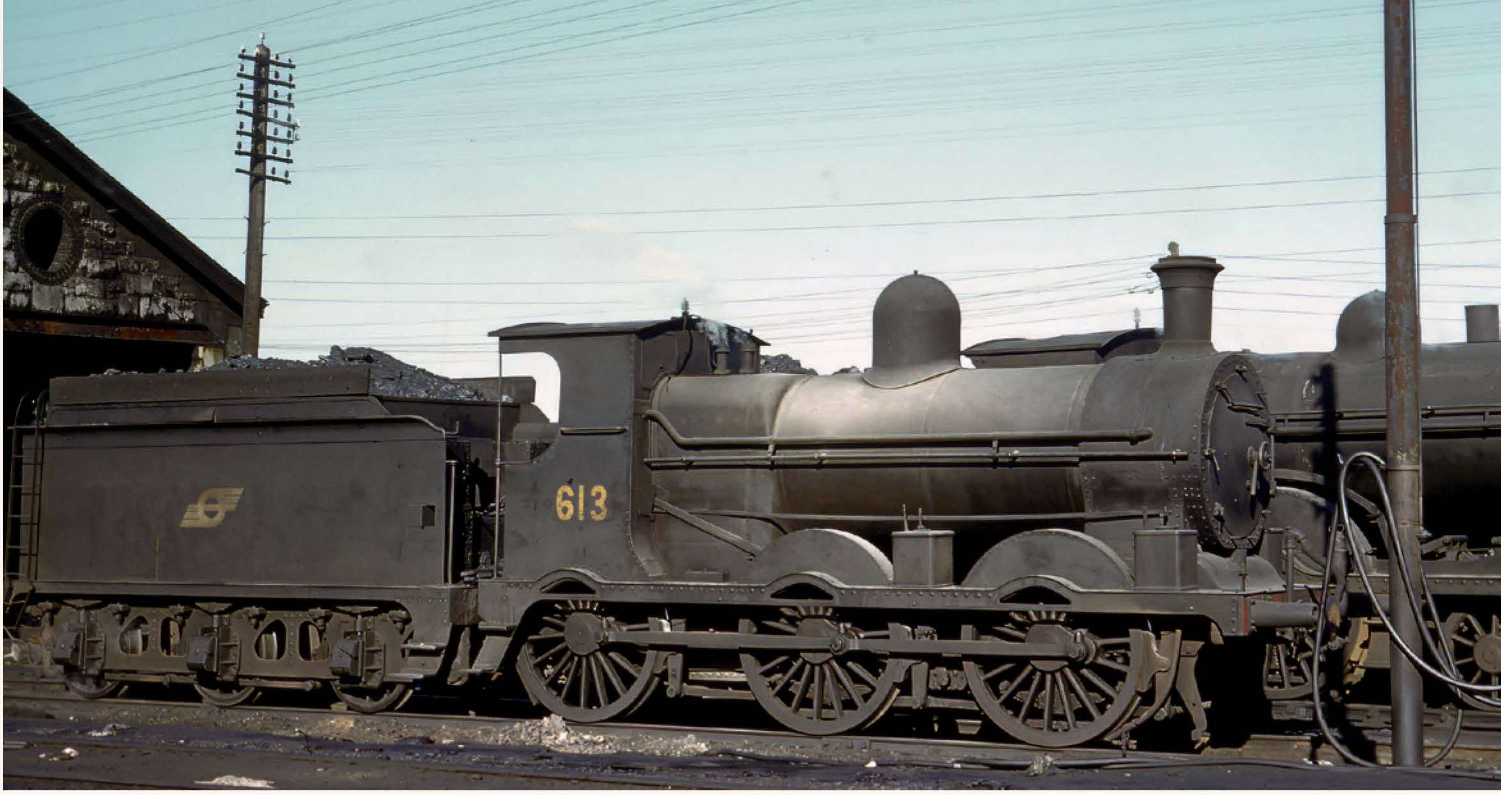




ABOVE: **And a 'Big D', Class SG3, the most powerful of the GN (I)'s 0-6-0s, No.48 stands outside the locomotive shed at Londonderry in 1957. No.48 came from Beyer Peacock in 1920, was transferred to the CIE in 1958 and was withdrawn from service in November 1962.** (Colour-Rail.com FIE05855)

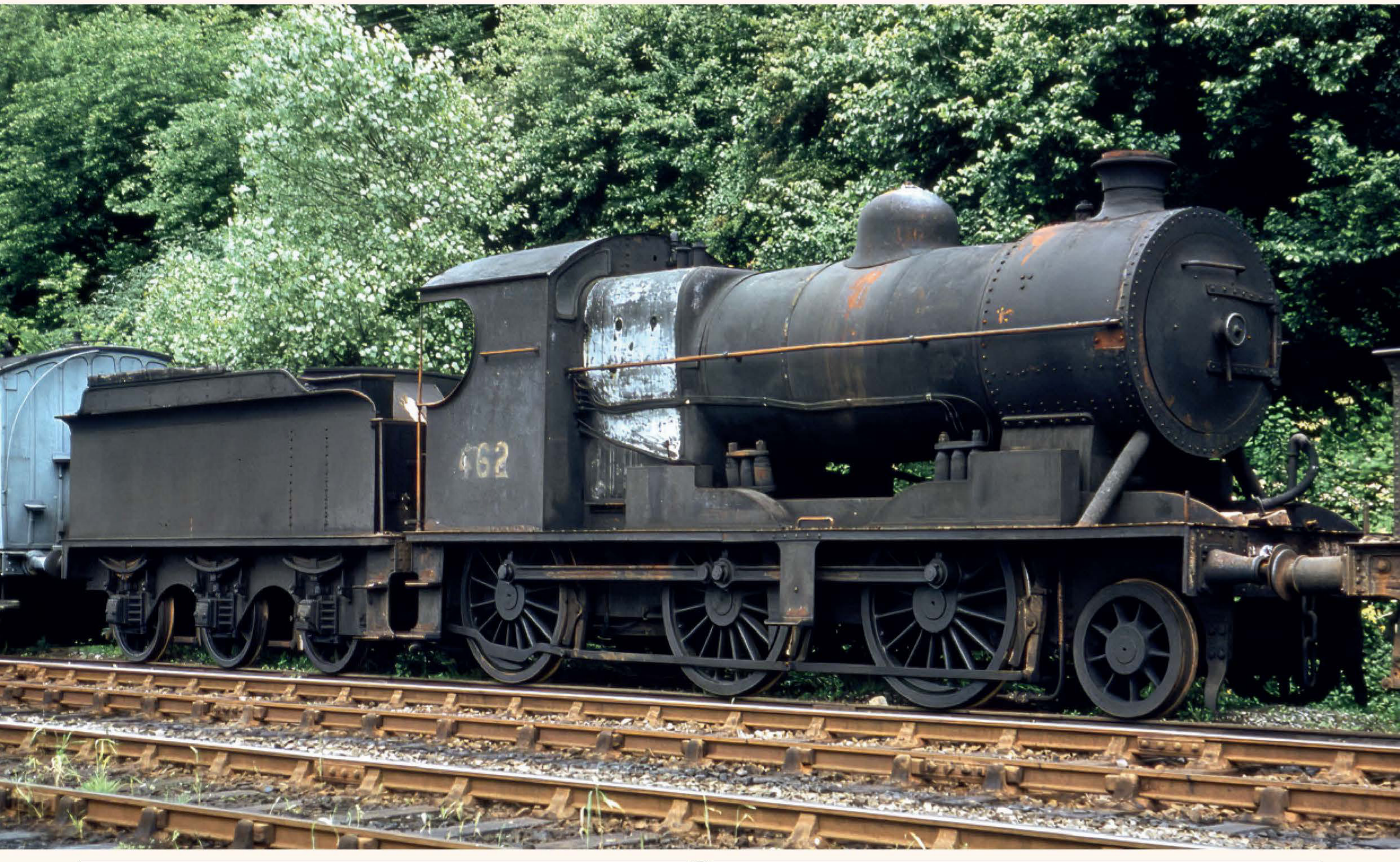
BELOW: **Looking decidedly 'lived in', Midland Great Western Railway (MGWR) 'Standard Goods' No.594 stands outside the engine shed at Sligo in 1957. Designed by Martin Atock and built at the MGWR's works at Broadstone in Dublin in 1885, No.594 originally carried the name *Inny*. 'Authority' at Inchicore didn't think highly of the 'Standard Goods', referring to them in a report in 1948 as "design poor and very few of them alike. Wear too rapidly". No.594 was withdrawn in 1961.** (Colour-Rail.com FIE05848)

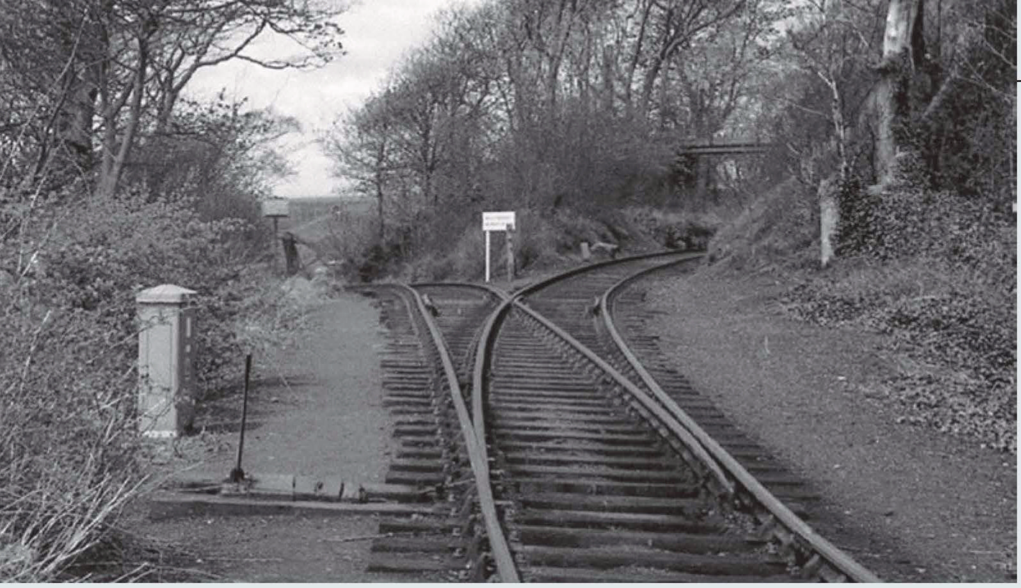




ABOVE: **What a difference a boiler makes! Former MGWR 0-6-0 No.613, seen here at Athlone in May 1957, started life in similar style to the battered No.594 seen earlier. In 1940 Inchicore fitted the locomotive with a superheated Belpaire boiler, thus giving it a slightly less antiquated appearance. No.613 was built at Broadstone and came into service in 1893 carrying the name *Clancarty*. It was with drawn from service in 1963. A fine 'flying snail' and wooden coal 'rails' adorn the tender.** (Colour-Rail.com FIE05845)

BELOW: **The Dublin & South Eastern Railway's (DSER) finest! The 1948 motive power assessment from Inchicore spoke highly of this ungainly 'Mogul' and its sister, No.461, commenting "One of the best Goods on the system, very powerful and reliable with low axle load. Unfortunately only two in class." Designed by George Henry Wild, the DSER's locomotive superintendent, and delivered from Beyer Peacock in 1922, the two locomotives, DSER Nos.15 (later 461) and 16 (as pictured 462), arrived in Dublin at the height of the Irish Civil War. They were immediately moved north to safe storage at Adelaide depot in Belfast; Wild, after all, had been a GN (I) man and only returned south after the cessation of hostilities. For 30 years or so the two locomotives worked turn and turn about, and with considerable aplomb, on the overnight goods service between Dublin and Wexford. No.461 survives in preservation with the Railway Preservation Society of Ireland. No.462, looking woebegone in this picture taken at Waterford in 1961, was withdrawn in 1963 and scrapped at Inchicore. The pipes leading from the smokebox down to the running board were for the disposal of ash and char.** (Colour-Rail.com FIE05833)





The junction of the Charlestown and Crombie branch lines in about 1972 – to the right is the route from Elbowend Junction, Dunfermline, while the way to Crombie was on the left. Charlestown Goods and the stub end of the line lay behind the photographer. (Jim Page)

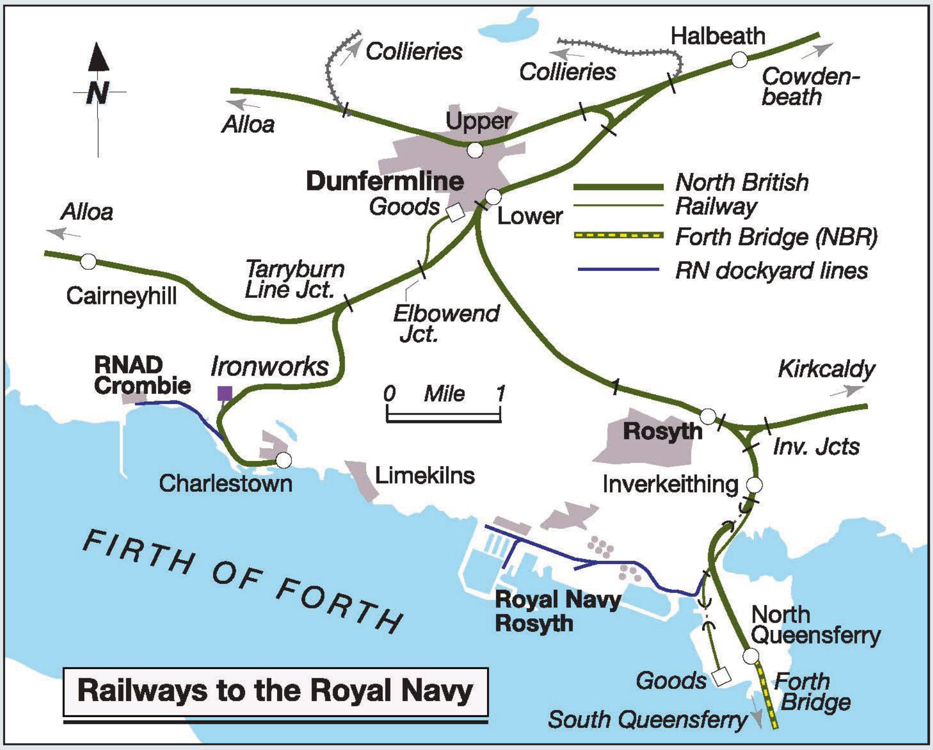
THE NORTH BRITISH AND THE ADMIRALTY AT CROMBIE

BY ALISTAIR F. NISBET

Once it had been decided to locate the Royal Navy's new Naval Base at Rosyth, on the Firth of Forth, it was necessary to provide all the back-up facilities that such a site needs including storage for all the myriad items that help a ship to maintain its readiness for sea duty and for war. A storage facility was also required for all the explosive materials and it was considered essential that it should be rail-served. Land adjacent to the North British Railway's (NBR) branch line to Charlestown was the most suitable, being roughly three miles upstream from Rosyth and, as the Crombie Estate had a river frontage, this was purchased in its entirety.

This article endeavours to relate how the railway connection came about together with various incidents which occurred during the line's existence. The armaments facility was opened as Royal Naval Ordnance Depot (RNOD) Crombie and is still in existence, having been renamed successively as Royal Naval Armaments Depot (RNAD) and currently Defence Munitions (DM) Crombie, part of the Defence Storage and Distribution Agency. With direct access to the Forth, this allows supply vessels to come alongside a jetty for loading. It should not be confused with the former naval stores depot (RNSD) Lathalmond which was a World War I development; after closure this was transformed into the Scottish Vintage Bus Museum with a small railway presence.

Once it had been determined that the Admiralty wished to establish this separate secure storage site, negotiations began between the Admiral in charge at Rosyth and the NBR about provision of a rail connection and this was achieved by construction of a short new spur from the Charlestown branch.



The Dunfermline to Charlestown branch was originally conceived for mineral traffic but was later upgraded to carry a passenger service. A separate article will relate the ups and downs of this railway from its earliest tramway days to its closure by British Railways. Although the new spur was not intended to carry passenger traffic, it was to be directly connected to a passenger-carrying branch line and therefore required to be inspected and approved by the Board of Trade (BoT). When work had progressed to the stage where traffic could begin the NBR applied for the necessary inspection and Major Pringle duly undertook this and reported on 14th June 1911. The points giving access to the line faced Charlestown and trap points had been installed between Crombie Branch Junction and Charlestown station. Signalling was in accordance with BoT requirements and was worked from Charlestown Goods signal cabin where there were 25 levers and one space in the frame; one of the levers was currently spare. Everything was satisfactory and the junction could safely be used.

Enhancements

On 10th December 1913 the authorities at Rosyth notified the NB that they intended to install sidings at the western end of the Crombie connection and wanted details of the railway company's requirements for these. There would be a Transfer Shed and a Transfer Table – presumably a traverser. The NB's Operating Superintendent wondered if their engines were expected to work this far into the Depot for this had not previously been suggested or agreed. The company agreed to provide the permanent way materials on a repayment basis; once the Admiralty's contractor had completed laying the sidings they were inspected by the North British in May and June 1914 and agreed as being satisfactory. Negotiations about how far the NBR would work the traffic evidently did take place subsequently for, in April 1915, the Notice Board indicating the limit for North British locomotives was moved to a new location at the new sidings.

Although most requests for major work came from the Superintendent Civil Engineer at Rosyth, occasionally minor requests did originate locally such as when Crombie Depot staff asked, on 15th August 1915, if there could be changes to the times of the 7.05am Dunfermline to Charlestown. This was to ensure that the 80 or so workmen who travelled on it daily, and who had no other means of reaching Crombie, would not be late for work. They also wondered whether they could have a small halt erected as near to the Charlestown Junction signal cabin as possible, for this would allow access directly into the premises. In the interim, could the 7.05 be altered to leave at 6.55 to allow men more time to walk from

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LOADED OR EMPTY TRUCKS

A narrow gauge locomotive within the site at Crombie, 17th August 2017. (Author's Collection)

Charlestown station?

The District Traffic Superintendent at Burntisland thought this was a good idea, especially as the men were employed on the manufacture and packing of essential munitions; the use of the halt should not be confined to Government employees as other contractors were working nearby too. He would have no problems in advancing the 7.05 to 6.55 temporarily. Therefore the Superintendent of the Line (J. Black) issued instructions on 23rd August that the new departure time would apply from 30th August.

The Engineer (W. A. Fraser) informed Black on 24th September 1915 that a new halt with a platform 240 feet long and six feet wide could be provided for £181. When approving the plans Black said the Admiralty should bear the cost of it as there would be no additional revenue obtained from its existence. He also suggested setting a small gate into the fence to admit workmen straight into the RNOD. The naval authorities disagreed about the funding, saying that without the halt the employees would be likely to desert the train for the buses "which get them nearer to their homes and work" – but didn't they say earlier on that there was no other way to get there? They also thought the proposed halt was more elaborate than they considered necessary – to which the NB asked for their minimum specification; the Navy folk could not, however, suggest any alterations as they were not conversant with the BoT Regulations in such matters".

Nevertheless the cheapest format possible would satisfy them, especially if it was near to the signal box. The BoT was notified of the proposed halt on 1st December 1915 with the depot being told on 6th December that work would be done as soon as possible. On 1st March Fraser said the work was complete and the Halt could be opened forthwith though, of course, the BoT had to approve it. Provisional sanction was given on 7th March, subject to a later inspection by Lt.Col. Druitt "as soon as he conveniently can" and services stopped there from 10th March. Druitt duly found it convenient to see the new construction in mid-May, his report being dated the 23rd. The halt had a couple of oil lamps installed as well as a wicket gate into the Admiralty premises and, provided it was used only by workmen, everything was satisfactory.

The Rosyth authorities notified the NBR on 22nd December 1916 of some proposed changes to the track into Crombie depot and requested that the work be done *tout de suite* as it was an extremely urgent War requirement. Fraser looked at the planned changes and noted that some proposed turnouts seemed to be of only 200-300ft radius, too tight for the NB to work over. It was, however, unclear if this was what was really intended as were some other matters such as the height of a loading bank. It seems that much traffic which currently came from Grangemouth by river was to be transferred to rail but the NB did not think this would tax its accommodation at Charlestown.

Another development came on 10th January 1917 when the Admiralty asked if the railway could supply all the parts for three upgraded sets of points and crossings which its contractors (R. Bruce & Sons of Edinburgh) were to put in place – currently the rails were 84lb per yard. Jackson responded to say they could not supply them from stock but if Rosyth will let them have the necessary 92lb/yd rails the NB will have the pointwork specially constructed. This offer was accepted on 23rd January and Fraser estimated that the work should be completed within fourteen days of the rails reaching the NB's Baileyfield Works near

The crossing leading to the Charlestown Foundry in about 1972. (Jim Page)

Leith. It turned out that the RN was only going to send 90lb/yd rail and this would not fit the NB's chairs and it would therefore be necessary for the Navy to supply the chairs and other fittings as well as rails.

A notice was issued to NB staff on 27th July 17 informing them that the contractors' connection would be moved 70 yards nearer to Charlestown and the Notice Board 80 yards nearer. This all came about after a telephone call from Crombie on 3rd February about "some temporary siding accommodation" needed in connection with the contractors' operations – they had had a site meeting the day before with one of the Burntisland District Traffic Superintendent's staff to discuss what could be done. Jackson agreed that a temporary connection could be laid in the following day (Sunday) and Stemp reported on 5th February that he had been to the site and found that two sidings were needed.

He agreed to find a pilot guard and expected the Navy or its contractors to pay his wages while he was employed on this work though the following day the Admiralty considered a suggestion that it would provide "a reliable man to act as pointsman and pilot guard" who would be under the direction and control of North British staff. It did not feel it necessary to have "any special signalling or safety appliances" as the new lines were practically level – the points would be sprung loaded to remain open for NB traffic unless specifically changed. It thought it would probably be desirable to place 'a hand signal' at the railway gates near the bridge over the Lyne Burn and felt a suitable device could easily be obtained.

On 14th February Rosyth Dockyard confirmed that the contractors will work their traffic with their own engine and that the NB would continue to deliver and remove the normal traffic. It also said that the temporary sidings were likely to be moved about the site as the work progressed. It was agreed on 26th February that the pilot guard would be provided by Stemp but funded by the Admiralty. The temporary connections had been installed by 26th April.

The amount of paper used up on all this temporary trackwork is staggering – and all in wartime, too.

Crombie Halt expansion

Use of the halt seems to have grown so rapidly that by mid-October the Depot authorities realised that their original estimates of use were utterly inadequate and so, on the 25th, they formally asked whether it could be widened and lengthened as there were now more than 450 people using it daily – almost three times the original number; the trains could not be lengthened. Furthermore they also realised that some kind of shelter was necessary after all. Fraser suggested that an extra 170ft length and 4ft width could be provided at an estimated cost of £587. He noted that the ground was difficult ("it does not lie very suitably") and so the cost included the need to construct a supporting embankment. A shelter 40 x 6ft was proposed. Nothing more seems to have been done at the time but C. H. Stemp, the Outdoor Superintendent, had a further look at the request on 21st July 1917 as the Depot had now suggested the shelter should be 80 x 6ft; the revised cost now became £704.

The end of the line near Charlestown goods in about 1972 – trains for Crombie had to come to this point in order that they could be propelled back uphill and on to the RNAD as far as the exchange sidings. (Jim Page)

Somehow the idea seems to have arisen that the NB needed to acquire additional land but the Depot said this was not necessary – the NB was, however, adamant that it did not own enough else it would only be able to extend the platform by 60ft. On 31st August the Rosyth authorities became involved and said they would get the Admiralty electricity supply extended to the halt – the question of providing more than a couple of oil lamps had been another potential sticking point which had arisen. The NB eventually said it would do the necessary work provided the Admiralty "can put us in possession of the land required".

Lighting of the halt was again raised on 18th February 1918 when it was noted that there were still only two paraffin lamps and these were frequently tampered with by the workers who used the Halt – as a result it was often in complete darkness. By the end of September the Admiralty's requirements had changed yet again for the Rosyth authorities were asking if the platforms could be widened owing to the very congested state of the halt – it was almost all on Admiralty property and could be done cheaply by the Admiralty (or its contractors). The Engineer thought the cost of moving telegraph poles should be covered by the Admiralty which said it did not need moving but if any turned out to be in the way then the RN would indeed pay.

The halt becomes a public station

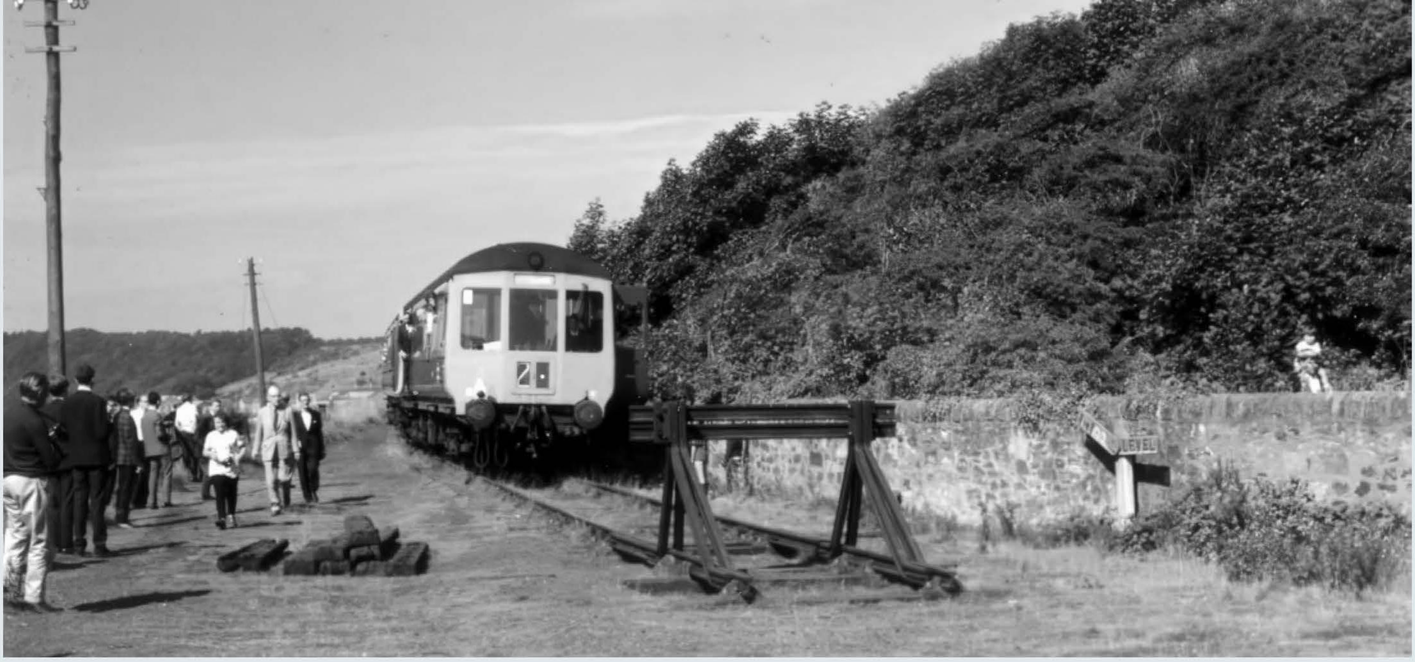
Some months after hostilities had ceased the Depot staff considered there was merit in the halt being upgraded to a public station and on 8th July 1919 put this suggestion to the North British. Their case was that there were now 120 houses in Crombie village as well as Single Men's Quarters, a total of some 800 people, and another 66 houses were planned. There were no shopping or other amenities nearer than Dunfermline and the Depot was more than two miles from either Charlestown or Cairneyhill stations. If it could become a proper station issuing tickets to the public for use by Charlestown trains stopping there it would be a boon and in the NB's interests by carrying additional passengers. Stemp did not think it would be a good investment and so the request was bounced around internally in the company for ages before a favourable decision was made. The Engineer is recorded, on 31st October, as preparing estimates for enlarging the halt to include a booking office, extra lighting, fencing, a waiting shed and earth closet – these amounted to £1,238. The Depot was eventually informed, on 15th March 1920, that the alterations would happen and the Engineer had been instructed to proceed with the necessary work.

Soon afterwards the RN staff asked if they could have some tickets on pre-payment terms for them to sell to residents until the station was formally opened. This concerned Stemp and he made investigations which revealed that Dunfermline Lower had been collecting fares from members of the public who were already travelling from Crombie Halt – this was a most reprehensible practice which he would have stopped had he known. Nevertheless he accepted the idea proposed by the Navy but suggested that only single tickets be issued as returns could not be dated – two days' availability was allowed on returns for up to twelve miles. The enhanced station was opened for public use from 1st March 1921 as Braeside Halt (for Crombie).

A mishap

An accident occurred on 17th September 1917 at the gated crossing over a private road to the Charlestown Foundry. Although this actually occurred on the line to Charlestown, it is included here as the use of the level crossing by Admiralty personnel is relevant.

Fraser, the Engineer, reported on 2nd October that the occupation crossing was



only supposed to be used by Mr. Miller of Waulkmill, the Earl of Elgin and Mr. Morton of the Charlestown Foundry. Keys for the gates had been issued to all three users but Morton had refused to sign for them, allegedly because he undertook the maintenance of the road. In practice the gates were seldom closed for even though the NB men shut them, the next (external) parties to use the crossing invariably left them open. It was also clear that the road and crossing were being used for naval traffic. When investigating the incident it came to light that when the Admiralty acquired the Crombie Estate the owner (Miller) moved to Waulkmill but retained a 'servitude right of access' for his farm traffic to and from the public highway by way of the private road and level crossing and had used it consistently. There was definitely no public right of way, yet the Admiralty staff had assumed that they were within their rights to use this way to access the Ammunition Depot. Two meetings with the Admiralty's solicitor were held on 3rd and 15th April 1918 and on 2nd May a draft agreement for use of the level crossing was sent to James Calder who was now the NBR's General Manager.

Fraser suggested on 26th November that the only solution was to close the crossing, withdraw the keys and appoint a gatekeeper instead. Stemp agreed with this suggestion apart from requiring two gatekeepers to cover the whole time the line was in use.

Walking on the track

Perhaps as a result of the level crossing incident referred to above, it seems to have dawned on the Rosyth authorities of the dangers incurred daily by many of the Crombie workers living in Charlestown and Limekilns who walked to work along the railway line rather than use the train to the Halt. In order to remove the danger therefore they informed the North British, on Christmas Day 1917, that they proposed to acquire some land from the railway company and Lord Elgin to make a footpath and also a bridge over the line.

This proposal did not seem to have a very high priority and it therefore drifted on and on for over a year including the possibility of incorporating this with improving the Foundry level crossing. By 13th January 1920 the cost of the improvements was estimated at £290 for new gates, signalling, dwarf frame and hut plus £100 for a telephone between the hut and Charlestown signal cabin. By 25th February nothing had been resolved and Stemp reported that the Admiralty no longer knew when it was likely to make use of the level crossing and therefore felt there was no immediate necessity to carry out any of the proposed work. The safety aspect of the footpath seems to have been forgotten altogether.

A two-car Class 100 DMU working the Branch Line Society's 'The Fife Railtour' on 30th August 1969 at the end of the line at Charlestown after traversing the Crombie stub. The railtour had started at Stirling and went on to Dunfermline Lower and Leven before returning to Stirling. (RCTS/Coll. Mr. Martin)

Working the spur

All trains serving the exchange sidings were required to have the engine at the Charlestown end of the train and propelling from there to the junction and on to the spur was the normal method of working.

According to the BR Sectional Appendix dated 1960 the number of wagons, either loaded or empty, on one lift must not exceed fifteen between Charlestown Goods Yard and Crombie Depot (both directions). On the west side of the Morton Burn bridge a boundary fence with gate was erected across the track at a point 250 yards from the entrance to the spur. The gate was normally kept closed against the railway except when it had to be opened for the passage of trains. It was in charge of an Admiralty policeman who, on hearing an engine crow whistle, would open the gate which was not provided with a gate lamp. During hours of darkness, drivers were therefore required to bring their train to a stand at the entrance to the branch to enable the guard or shunter to walk forward and satisfy himself that the Admiralty policeman had opened the gate. If the gate was open for the movement the guard or shunter must hand-signal his driver forward. Trainmen were to lift from, or leave traffic on, the respective sidings as instructed by the Admiralty official in charge. If no official is at hand, the driver must sound his engine whistle.

The branch was classified as RA 6 by the LNER but Classes J37 and J38, which would normally have been excluded from this RA classification, were also permitted. It has been observed that a former Midland & South West Junction locomotive, No.14, was dismantled in 1914 and for an unidentified reason some of its parts were sent all the way to the NBR at Cowlairs; here it was given a second-hand boiler and tender and a new cab for use internally at Crombie RNOD – it may have been used at Rosyth as well although no references to this have been traced so far. After World War I it was sold on to Cramlington Colliery in Northumberland.

After the Armistice the Depot continued in existence and rail traffic ran much as it had previously for the whole of the 1920s and '30s. There was, however, no mention of the depot in the Working Timetables by then – trains simply served Braeside Halt. Once World War II had been declared the pace of traffic picked up and, as the Charlestown branch no longer carried passenger services, it was relatively easy to accommodate naval traffic – in the Working Timetable dated 2nd October 1944 there were no specific services shown, traffic being worked "as required".

Post-war the site remained in use, as indeed it does to this day, although it seems that rail-borne goods traffic ceased at some time during 1993.

Special charter traffic

The Six Bells Junction website suggests that on 4th April 1967 the 62C Society ran a trip from Dunfermline Upper Sidings to Crombie RNAD and return. It was intended to use J35 No.65288 but this was not permitted in the depot as it had no spark arrester. Instead the train went down to Charlestown where everyone had to alight while the train was shunted via the RNAD sidings so only the traincrew had the opportunity to 'do' the naval track after all. On 30th August 1969 a Branch Line Society diesel multiple unit railtour of Fife visited Crombie Depot on its way from Stirling to Dunfermline Lower and on 20th April 1974 the Angus Rail Group's 'Five Counties' DMU tour went as far as the start of the spur. Almost all signs of the former infrastructure have now been obliterated or overgrown so as to be invisible.

Ambergate c1910. Ambergate station, at this time was an important triangular junction station with Derby to the south, Buxton and Manchester to the north west and Sheffield to the north.
(Howard Sprenger Collection)

DERBYSHIRE'S MAIN LINE THAT NEVER WAS THE WIRKSWORTH AND ROWSLEY LINE

BY JOHN STOKES

The story of this line starts with a completely different route altogether: that of the railway from Ambergate, north of Derby, to Rowsley, Buxton and beyond. It was the Midland Railway's ambition to reach Manchester and its rivalry with the London & North Western Railway fuelled the fire of competition in this part of Derbyshire.

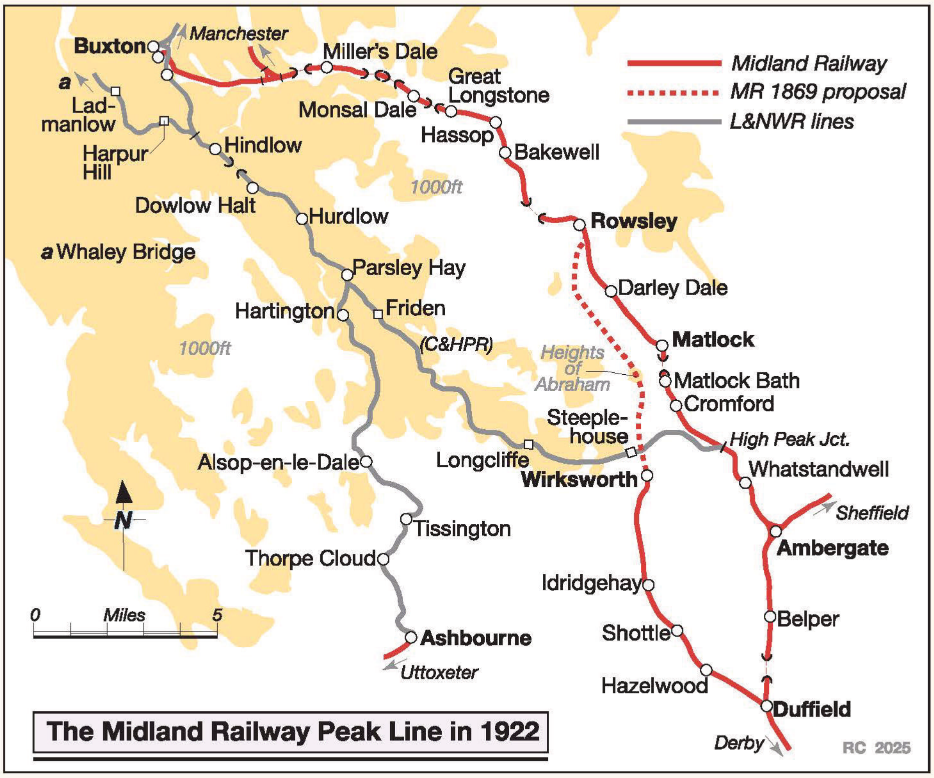
The modern-day Matlock branch, a shadow of its former importance, is the stub of the Midland Railway main line to Manchester via Rowsley, Buxton and Millers Dale. This route to Manchester was opened in stages. The first section opened on 4th June 1849 between a junction with the Midland Railway's Chesterfield line at Ambergate and Rowsley village. It was built by the rather grandly named Manchester, Buxton, Matlock and Midland Junction Railway. This railway was promoted jointly by the Midland Railway and the Manchester & Birmingham Railway.

However, when the Act was passed, the Manchester & Birmingham Railway Company had become part of the London & North Western Railway, leaving the two great rivals with a joint line on the outskirts of Midland Railway territory, with the Midland still looking longingly in the direction of Manchester. Fast forward three years and by 30th August 1852 a new joint lease of the MBM&MJR was agreed by both the MR and the LNWR. It's fair to assume that this was a situation the Midland felt was less than ideal, relations with the LNWR having continued to deteriorate: the LNWR of this time had a rather unsavoury reputation. This discomfort with the LNWR can clearly be seen by the actions of Midland company from 1863 onwards.

Between the years of 1862 and 1863 the Midland Railway extended the route from Rowsley to Buxton via Millers Dale. Manchester and the industries of Lancashire were now tantalisingly close but still out of reach. Building this stretch of line also boxed in the LNWR. Any traffic over the MBM&MJR would have to go via the Midland Railway from either Rowsley or Ambergate.

It is worth noting that by 1862 the LNWR had obtained the lease of the Cromford & High Peak Railway. A junction which connected the C&HPR and the MBM&MJR was built in 1853 at Cromford. Yet, even by the standards of the 1860s, the Cromford & High Peak Railway was a very old-fashioned route with steep, slow, rope-worked inclines: it was hardly going to retrieve the isolated section of the Rowsley line for the LNWR. Originally designed to connect the Cromford Canal and Peak Forest Canal at Whaley Bridge, it could be in no way described as a fast route to Manchester and was only really suitable for goods and local mineral traffic.

The Midland Railway Additional Powers Act of 21st July 1863 therefore included provision to build the Wirksworth Branch. This line would run from a Junction with the Midland Railway at Duffield up to Wirksworth. Though having the happy coincidence of serving the settlements of the Ecclesbourne valley, it was a potential route to Manchester avoiding any LNWR involvement, if extended north of Wirksworth. The Wirksworth railway opened on the 1st October 1867. Careful examination of the structures of the line and of the way that Wirksworth was laid out as a through station, reveals that this could have been a main line if so required. An excellent book *The Wirksworth Branch* (Oakwood Press) by Howard Sprenger details the history of the line. If readers are interested in the history of the Wirksworth branch this is by far the best publication to study.



Midland Railway
MR 1869 proposal
L&NWR lines
Buxton
Manchester
Miller's Dale
Great Longstone
Monsal Dale
Hassop
Bakewell
Lad-manlow
Harpur Hill
Hindlow
1000ft
Dowlow Halt
Hurdlow
Rowsley
a Whaley Bridge
a
Parsley Hay
Darley Dale
Hartington
Friden
1000ft
(C&HPR)
Matlock
Heights of Abraham
Matlock Bath
Cromford
Steeple-house
High Peak Jct.
Alsop-en-le-Dale
Longcliffe
Wirksworth
Whatstandwell
Sheffield
N
Tissington
Ambergate
Thorpe Cloud
Idridgehay
0
Miles
5
Belper
Ashbourne
Shottle
Uttoxeter
Hazelwood
Duffield
Derby
RC 2025

The Midland Railway Peak Line in 1922

Winding the story back a little bit, to sometime in the immediate years after 1861, both the Manchester, Sheffield & Lincolnshire Railway (latterly the Great Central Railway) and the Midland Railway were out and about looking for a route between Manchester and Buxton. This resulted in a chance meeting between the officers of both railways. Rather than battle it out they decided to co-operate and take the opportunity to give

Wirksworth c1890. Wirksworth station despite being the branch terminus was laid out as a wayside station. Just to the far right of the picture under Cemetery Lane Bridge would have been the start of the Wirksworth and Rowsley Line. (Howard Sprenger Collection)

the LNWR a kicking. The upshot of this was that the Midland Railway would use the MSL and its London Road station to gain access to Manchester. The Manchester City Council and Chamber of Commerce were also keen on this idea. These two organisations would be very pleased to have a line serving Derby, Nottingham, Leicester and London. After a short while the station at Manchester London Road was replaced by Manchester Central, a fine station with services by the Midland, the MSL and the Great Northern Railways.

The final piece of the jigsaw was the connecting of the Midland Railway to the MSL. A junction was built at Blackwell Mill to the west of Millers Dale. A Midland Line then stretched north from there to connect to the MSL at New Mills. This connection saw the Midland Railway's long-held desire of through running from Derby to Manchester come to fruition in 1867. So effective had this series of actions proved, that the Midland could reach Manchester with fast expresses only ten minutes greater than the LNWR's expresses.

We are quite some way down the page here but this is where the Wirksworth and Rowsley Line now becomes important. The Midland Railway in 1869 still did not quite have it all its own way. The joint lease of the MBM&MJR with the LNWR remained a thorn in the MR's side – a potential for trouble in the future smooth running of the line and the Midland's Manchester aspirations. Though the lease was to expire in 1871 there was no guarantee that the MR would get what it wished for – sole control. The Midland Railway had indeed begun negotiations for the sole lease or ownership of the MBM&MJR. However, it must have felt that it needed to show the LNWR it was serious and meant business. Therefore during 1869 a survey was commissioned for the Wirksworth and Rowsley line. This work was undertaken by John Sydney Crossley (1812-1879), the Midland Railway's own engineer.

The official mileage start of the Wirksworth and Rowsley Line would have begun 14 chains north of the Wirksworth passenger station. The summit of the line would be within Wirksworth yard, 216ft above the level of the line at Duffield. The rest of the Wirksworth and Rowsley line would then be downhill all the way to Rowsley, falling at between 1 in 164 and 1 in 100.

The line would enter the first of three major tunnels just after leaving Wirksworth yard. This monster of a tunnel would have been nearly a mile long at 1,503 yards. At its deepest point it would have been 267ft down, exactly underneath the Cromford & High Peak Railway, the north portal standing in the hillside about a mile from Wirksworth.

Bursting out of this tunnel a train would almost immediately find itself upon a 280ft-long viaduct. Passing high over the village of Cromford and via Mill Dam, the bridge would have needed to be 147ft high. Following on after this viaduct, approximately two miles from Wirksworth, the line would have been cut into the hillside above and to the west of Matlock Bath. The plans for the line do not show any stations apart from the then existing ones at Wirksworth and Rowsley.

The planned line continued on, plunging into a second tunnel 500 yards in length, which at its deepest passed below the Heights of Abraham at 335ft down. This is approximately 2½ miles from the start of the line. After a brief respite from being in a tunnel, only half a mile of daylight appears before the line dives once again into another 980yd-long bore, this time a modest depth by comparison with the other two of 154ft.

During all this railway enthusiasts' excitement of tunnels and viaducts, the planned railway curved away from Matlock proper, with the line stubbornly continuing to stay west of the River Derwent. This is the opposite bank of the Derwent from the MBM&MJR which follows the eastern side of the valley, but was probably to reduce the need for even more engineering works in this part of the Derwent Valley.

At roughly the four mile, halfway, mark of the line, a the second large viaduct, 300 yards long and 86ft high, passes over a valley near the village of Oaker End. A small tributary of the Derwent and Aston Lane would also have been traversed at this point. The final settlement of note was Darley Bridge (a small village), which the line would have passed through before entering Hill Carr Wood, the former being approximately 5½ miles, the latter approximately 6½ miles, from Wirksworth.

Around the eight-mile post the planned railway would have passed over Peaktor Lane, the River Wye, a mill goit and the main Buxton Turnpike Road, this major road being known today as the A6. Finally the line would have connected up with the Rowsley to Buxton Railway at a junction just before the bridge over Park Lane at Rowsley. This lies to the north west of the modern-day village of Rowsley, 49 chains north from Rowsley station, situated on the line from Matlock and Ambergate: the MBM&MJR route.

The total length of the planned line from Wirksworth would have been 8 miles 4 furlongs and 7 chains. As we have seen, it would have required three tunnels, two viaducts and an uncounted number of bridges. These smaller structures, not shown on the plans, would have been required to cross local roads and other topographical features. The length of the planned Wirksworth and Rowsley Line would almost have been the same as the Duffield to Wirksworth line. Thus the total railway from Duffield to Rowsley would have been nearly fifteen miles long. The local geology of the area is predominantly limestone, mudstone and shale. It can be argued that these rocks are easier to work than, for example, granite. This does not alter the fact that large and impressive civil engineering works would have been required.

There were also many landowners from whom it would be necessary to purchase property. The book of reference for the line (the list that shows who owns what) runs to 40 pages. Interestingly, there are a couple of famous landowners who owned large portions of land in this area. One such notable person was Frederick Arkwright (born 1806), a banker from Cromford who also happened to be the great grandson of Sir Richard Arkwright (1732-1792). Sir Richard was credited with (amongst other things) the invention of the water frame, a water-powered machine to spin cotton or wool. Sir Richard built

Rowsley's second station site looking south towards Derby in 1903. (Author's Collection)

Another 1903 view of Rowsley looking north towards Bakewell. (Author's Collection)

factories in various locations over Derbyshire, Staffordshire, Lancashire and Scotland. Another major landowner in the area was the 7th Duke of Rutland, Lord John Manners (1818-1906). The Duke of Rutland also owned Belvoir Castle in Nottinghamshire and it remains the family seat today. Lord Manners also had a political career at various times between the 1870s to 1890s. He was Postmaster General and Chancellor of the Duchy of Lancaster.

It's fair to assume that with the civil engineering and land purchase requirements, the Wirksworth and Rowsley Line would have been an expensive outlay for the Midland Railway.

In the 25th November 1869 edition of the *London Gazette*, notice was given of the 1870 Midland Railway Additional Powers Act. In the notice for the Act the authorisation to build the Wirksworth and Rowsley Line is mentioned. In the very same edition notice was also given for the Manchester, Buxton, Matlock & Midland Junction Railway to be vested into the Midland Railway, either by sale or lease, the date of transfer being on 1st July 1871, which was the expiration date of the old joint lease with the LNWR. On 29th November the Plans, Sections and Book of Reference were deposited with the Clerk of the Peace in Derby for the quarterly court sessions. A handwritten note reads "These Plans and Sections were deposited with me as Clerk of the Peace of the County of Derby this 29th day of November 1869. By Mr. Laud at 5.30 p.m."

Such was the determination to reach Manchester without any LNWR interference, it seems that the Midland was willing to hedge its bets. No doubt the Midland was also trying to prove to the LNWR that it would get what it wanted regardless of the MBM&MJR lease outcome.

In the Saturday February 5th 1870 edition of the *Derbyshire Times*, a report appeared regarding the half-yearly meeting of the Manchester, Buxton & Midland Junction Railway Company. The meeting took place on Wednesday 2nd February 1870 in Derby at one o'clock and was chaired by Mr. Holden MP. Also in attendance were the directors and shareholders of the MBM&MJR. Interestingly Mr. Price MP, Deputy Chairman of the Midland Railway, and Mr. J. Allport, General Manager of the Midland Railway, were present.

The second part of the meeting was set aside for special business. This was to consider the terms of sale of the MBM&MJR to the Midland Railway. Mention here was made by the Chairman that the current lease of the line was due to expire in 1871 and if Parliamentary powers were required then it would need to be in the 1870 session.

From the *Derbyshire Times* report we read that the directors of the LNWR were also approached regarding the lease. While the LNWR was willing to enter into another lease, it would only do so jointly with the Midland Railway. The MBM&MJR had held two meetings with the Midland Railway with a view to selling the line to the MR. After the second meeting the MBM&MJR directors felt that the Midland Railway had presented an offer that they could recommend to their shareholders. The MBM&MJR had seen that the Midland was determined to construct the Wirksworth and Rowsley Line. The MBM&MJR directors were concerned that if the Wirksworth and Rowsley Line was built then it would have greatly affected them. Presumably they were worried that if built the loss of MBM&MJR traffic to the Wirksworth and Rowsley Line would mean that the MBM&MJR would become unsustainable. No other parties had offered to buy the MBM&MJR so the directors recommended sale to the Midland Railway.

The Midland Railway Additional Powers Act dated 20th June 1870 mentions only the vesting of the MBM&MJR to the Midland Railway Company. There is no mention of the Wirksworth and Rowsley Line. The LNWR's interest in the MBM&MJR was to come to an end. On face value it seems logical that the LNWR thought that there was little or no value in holding the line anymore, surrounded as it would be by the Midland Railway. It was also the end of the road for the proposed Wirksworth and Rowsley Line, its purpose now being null and void, the quiet end of a main line that never was.

Class 153 single railcar No.153 319 awaits departure time in a sleepy Matlock station on 1st July 2009. This is the stub of the old Midland Railway main line to Manchester via Rowsley and Buxton. The line beyond here as far as Buxton closed in 1968. Matlock to Rowsley South now forms part of the Peak Rail heritage railway. (Author)

Nottingham
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Acknowledgements

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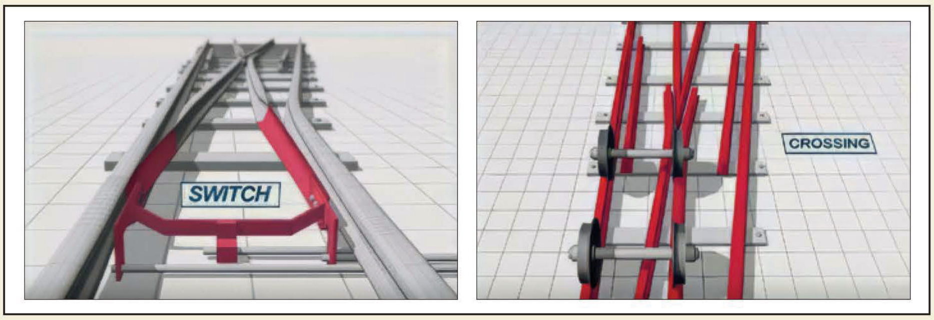
RAILWAY POINTS

Points are essential for safely guiding moving trains and railway rolling stock from one track to another. They are always there but how many passengers take any notice of them? asks **JAMES GRAHAM**



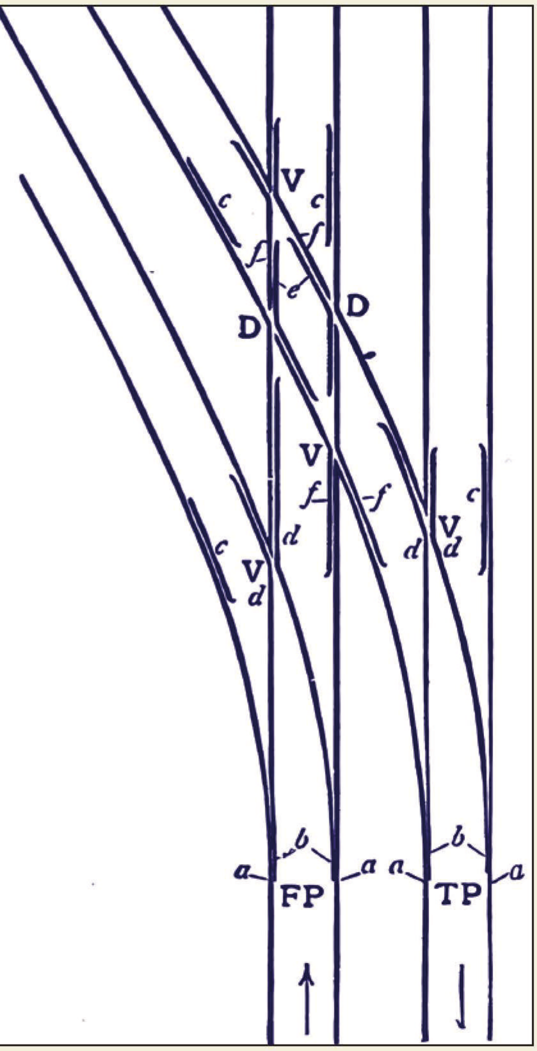
The components of a modern switches and crossings layout. (Source: Network Rail)

The humble points are a fundamental and important component of railway infrastructure. The importance is clearly demonstrated when they fail: how the *Backtrack* reader's heart sinks when the words 'points failure' are heard. Then simply the railway's ability to move a train or rolling stock between tracks disappears.

Before we look into the origins of the mechanism, it must be made clear that in popular parlance in the UK and most other Commonwealth countries, the term 'points' refers to the entire mechanism. In professional parlance, however, the term refers only to the movable rails at the heart of the apparatus. The entire mechanism is named 'turnout' or 'points and crossings'. 'Turnout' and 'switch' are terms used in North America in all contexts.

From the start, the applications of points saw three key roles. Firstly, at junctions, points guide trains or rolling stock on to different branches of the railway or toward specific loading or unloading areas; secondly, in sidings they direct wagons to storage or waiting tracks. Lastly, on single track railways, points enable trains and rolling stock to pull off to let others pass in the opposite direction or overtake. As of 2024, the UK rail network comprises approximately 21,602 switches and crossings (S&C).

A junction points scheme.



In almost all the rest of railway technology, there are many names of inventors responsible for all sort of equipment. Stephenson, Brunel, Pullman, Vignoles, Locke and Adams are just some of the names of those who launched locomotives, planned bridges, made railways or designed rolling stock. What is missing from that esteemed cohort of engineers and planners is any definitive identity of an individual responsible for the development of what we now know as points.

Indeed, so misted are the origins of points that not only is there no known inventor, there is not even agreement over in which country points first appeared, never mind which year.

The noted railway writer Dr. Michael Jonathan Taunton Lewis (born 1938), better recognised as M. J. T. Lewis, is known for his significant contributions to the study of early wooden railways and ancient surveying instruments. His notable works include *Early Wooden Railways* (1970), which remains a key text on the subject. In the 430-page text, he has few words for points from the 18th century. "The surviving evidence about points is meagre in the extreme. This is the greatest of pities, for their construction can be a useful guide to technological ingenuity. One thing does seem certain: that they were not like modern points" he writes.

Switch and crossing

The first modern railway points emerged in the early nineteenth century during the rail evolution. While the exact date remains uncertain, historical context suggests its development coincided with the rapid advancements in railway technology of that era, facilitating train direction changes and track intersections essential for expanding railway networks. These innovations played a crucial role in shaping modern rail systems worldwide.

According to Lewis, "in the heyday of the wooden waggonway, the evidence which survives shows that there was but one 'switch rail' to a set of points, not two, as the ordinary arrangement demands. Apart from two early references to 'ye parting of ye ways', which tells us nothing, nearly all the mentions of switches occur in valuations of existing waggonways. Most of these talk of a bolt, presumably the pivot for the switch rail, and some talk of iron plates and check rails as well. Thus as Walbottle, Newcastle upon Tyne, in 1771 we find 'Iron plates upon a Switch Rail 3½ yds: 4/-'.

"The valuation of the Western Way in 1789 contains many references such as '20 yards siding: Check & Switch: 5/- and ¼; 9 yards of Points (the only early use of the word 'points' that we have); Switch and plate; Switch & Bolt; at various prices from 10d to 1s 6d' – the latter at one of the most important switches on the whole line, the junction of the main and bye (*sic*) ways for the precipitous Leap Run. Similar items are found for other waggonways."

These early railway systems featured simple and robust single-shifting-rail turnouts. These designs, while effective, were inherently crude and basic in their construction. The acute angles of the turnouts likely caused a rough and jarring ride for wagons. Switch rails, typically as short as three yards, were deliberately kept concise to maintain simplicity and durability.
This practical design ensured minimal interference with the horse-path running between the rails, preserving the smooth operation of horse-drawn vehicles. Despite their unrefined nature, these points exemplified a balance between functionality and the limitations of early engineering, serving the needs of rudimentary rail systems with a focus on practicality and endurance over comfort or finesse.

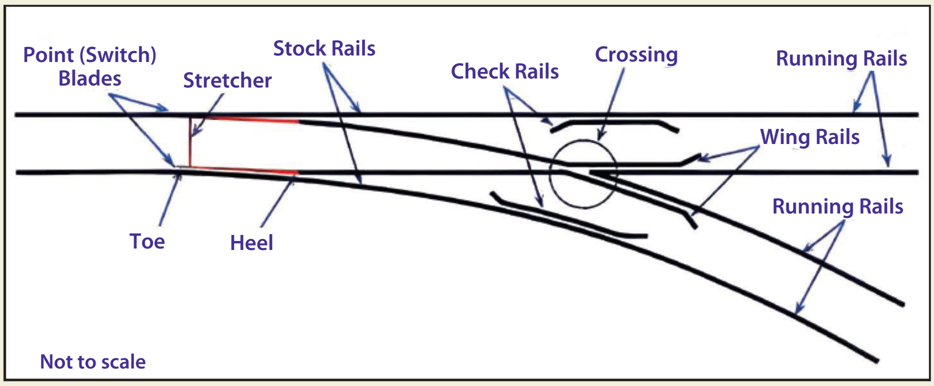
Lewis continues that the two tapered blades, anchored firmly at one end and capable of being moved at the other end under the elasticity of the iron, appeared first in 1839. Their immediate predecessors, two short blades pivoted at one end, go back probably to the beginnings of all-iron rails and were used to the dying days of wooden rails as well. The only illustration of point-work in timber shows just such an arrangement in use at Konigsgrube in Silesia in 1819.

It is noteworthy that the 1839 arrival of the two anchored tapered blade means that Stockton & Darlington (1825), Liverpool & Manchester (1830) and Canterbury & Whistable (1830) were all launched without such mechanism in place.

The nineteenth century name game

While it can be seen that the point arguably evolved from single switch rails to the modern era double switch rails, there are a number of names and dates in the nineteenth century that can point to ownership of certain steps towards the 21st century version.

WEAK LINK OR BACKBONE OF RAIL NETWORKS?



A railway switch-and-crossing.

The first in the frame as being the developer of points is William Hedley (1779-1843). His primary focus was on locomotive technology rather than track infrastructure. He is best known for his work on improving early steam locomotives, particularly the *Puffing Billy,* which demonstrated the feasibility of using smooth rails instead of cogged or wooden tracks for traction. However, there is no demonstrable evidence he had any role in the invention or significant development of railway points.

The first documented use of railway points was on early tramways and waggonways in England during the late eighteenth and early nineteenth centuries. The specific innovation is often attributed to William Jessop (1745-1814), an English civil engineer. Jessop is known for pioneering railways with flanged wheels and grooved rails in the 1700s, which laid the groundwork for modern railways.

In 1794 Jessop built a tramway from the western terminus of the Charnwood Forest Canal, near the George and Dragon pub on the A512 Loughborough Road, to the coalmines in the north of Swannington and Coleorton. The Loughborough to Nanpantan Railway is often cited as one of the earliest railways to use switches. These early switches were quite basic and manually operated, but they allowed wagons to be directed on to different tracks as was their purpose.

The points on the Loughborough to Nanpantan Railway were manually operated. A worker, often called a 'pointsman', would physically move the rails or points to guide the wagons from one track to another. The points consisted of a pivoting rail, which could be aligned to continue a wagon's movement straight ahead or to divert it on to a secondary track. These mechanisms were relatively simple, involving a lever or similar device to move the rail.

A man with the best case to claim the title as father of points is Sir Charles Fox (1810-1874), an English civil engineer and contractor. His work focused on railways, railway stations and bridges. One of his earliest inventions, patented in 1832, was railway points, which superseded the sliding rail used up to that time. The exact title of Fox's 1832 patent is not readily available. However, it is commonly referred to as the patent for the railway switch or railway points, the so-called 'switch and crossing' system. His obituary from the Institution of Civil Engineers in 1875 reads simply: "He also introduced the switch into railway practice."

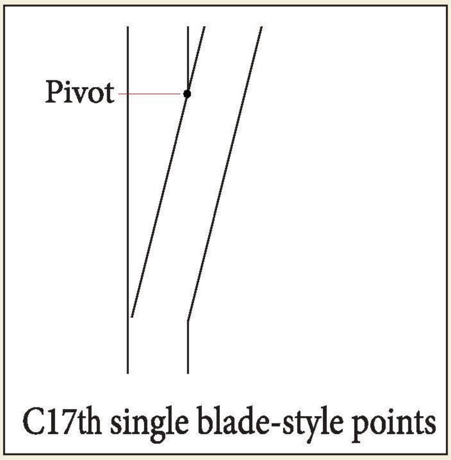
While he did not come up with the idea of points, in inventing the points mechanism, a key component of turnouts, he took points to the next level. This mechanism, activated by a lever connected to a pull rod, allowed the movable rails to guide trains from one track to another with two rails.

Trains traverse points in two directions

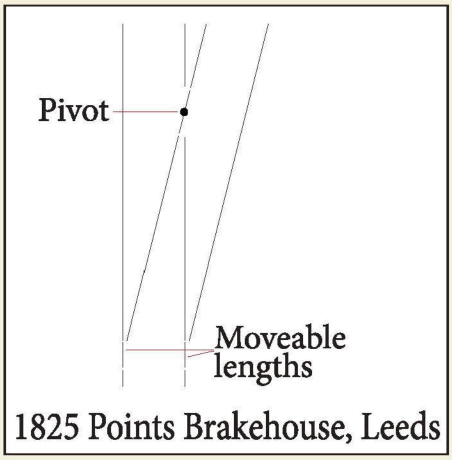
From the start, trains and rolling stock have travelled over points in two directions. This elemental fact has had important consequences in terms of safety and operation. 'Facing' and 'trailing' points are terms used in railway systems to describe the orientation and functionality of track points relative to the direction of a train or rolling stock movement. These are crucial concepts for understanding how trains navigate through complex track arrangements.

Facing points are encountered when a train approaches a set of points from the direction where the tracks diverge. The train has the option to move on to one of two or more diverging tracks, depending on the position of the points. The position of the points determines the train's direction, making facing points critical for routeing decisions.

Single blade-style points.



1825 Points Brakehouse, Leeds.



Trailing points are encountered when a train approaches a set of points from the direction where the tracks converge. The train is moving on to a single track from one of two or more converging tracks. The train's direction is already determined by the track it is on and the points are 'trailing' behind it. Trailing points are generally passive for the train's movement, as they align automatically depending on the track the train is on.

Safety issues come from the fact that facing points can open while a train is passing over, spreading the gauge and derailing the next set of wheels that encounters the open blade. This is resolved by the locking of the points for the appropriate straight-on or diverging route. An even greater danger was recognised less than three decades after the opening of the Liverpool & Manchester Railway. An inattentive or malicious signalman could contrive to direct a train on to the wrong line against a signal as he would control points and signals independently.

The Interlocking Patent (1856) by John Saxby (1821-1913) was a ground-breaking development in railway safety technology. It introduced the concept of mechanical interlocking for railway signals and points, ensuring that conflicting train movements could not occur. This significantly reduced the risk of accidents by mechanically linking signals and points. This meant that once a route was set and locked for a train, conflicting routes could not be set at the same time.

For example, if one track's points were aligned for a train to proceed, signals for conflicting tracks were automatically set to 'stop', preventing collisions. The innovation enforced a fail-safe approach. Human errors by signal operators were minimised, thought not entirely removed, because the system physically prevented incompatible settings.

However, this safeguard was beaten by human error on Valentine's Day 1927 on the approaches to Hull Paragon station. An incoming service from Withernsea to Hull collided head-on with a train from Hull to Scarborough. Twelve passengers were killed and 24 were seriously injured. A system of interlocking should have made it impossible to give clear signals to trains unless the route to be used is proved to be safe. In his book L. T. C. Rolt comments: "Scarcely any safety device existing at the time was lacking on the

Selsdon station and its display of points.

network of lines outside Paragon station...” However, one safety device did exist and was lacking – a track circuit which had been invented in the USA in the 1870s. This had been in use in the UK from the beginning of the twentieth century. There were no track circuits protecting the layout at Hull in February 1927. In his report on the accident, Col. J. W. Pringle recommended installation of a track circuit, which the LNER then carried out.

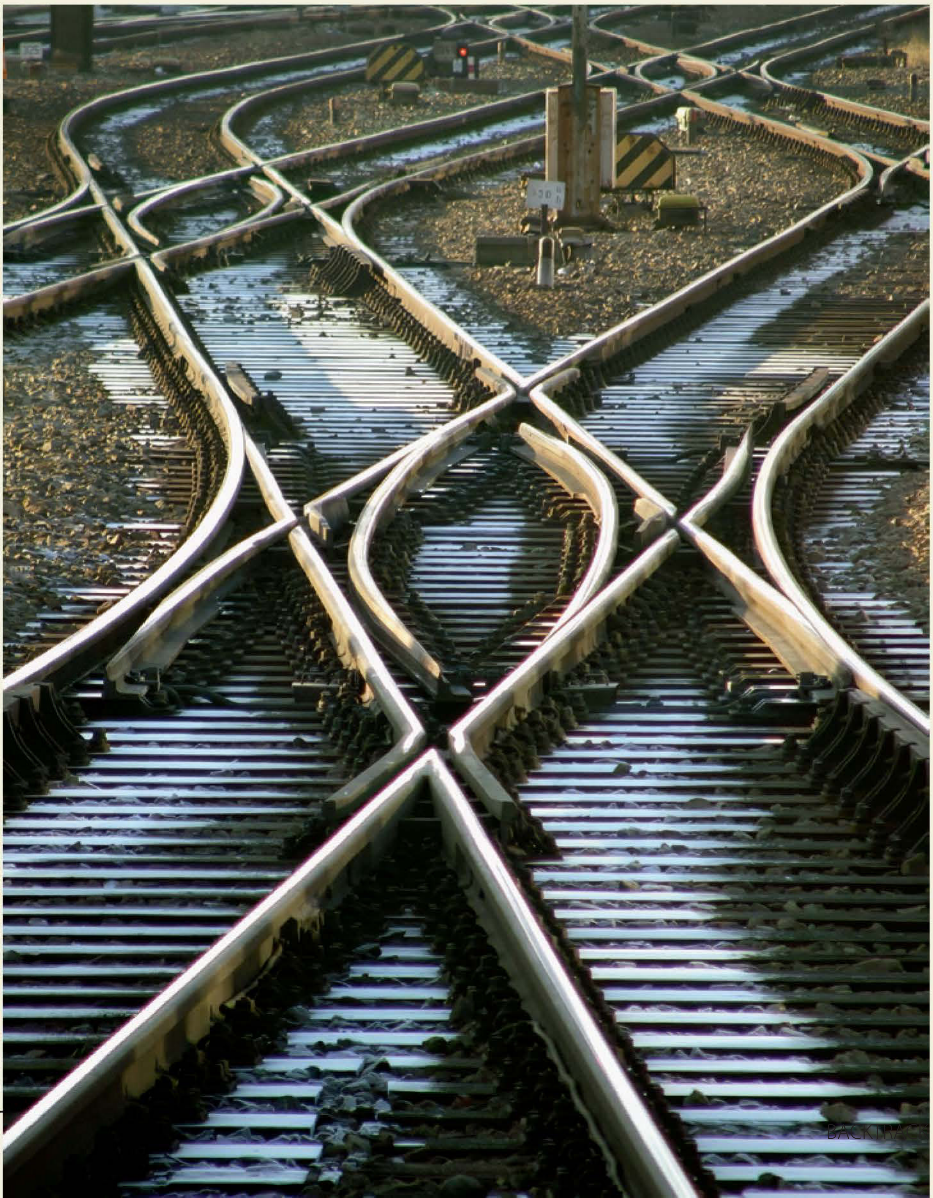
Three signalmen were present in the signal box. The enquiry found that one of them had pulled the wrong lever intending to set the points for the incoming train but instead set the points ahead of the Scarborough. The points were locked and could not be moved as long as the signal for the Scarborough train was at clear and also by the presence of locomotive or vehicle wheels on the locking bar immediately in rear of the points. One of the other signalmen was setting the signals behind the Scarborough train to danger and, in contravention of the rules, this was done whilst the train was still passing the signal and before it had reached the locking bar. This released the locking on the points for some 1.9 seconds before the Scarborough train reached the locking bar, allowing the points to be changed by the application of the wrong lever. A combination of these two failings led to the disaster.

Saxby’s patent laid the groundwork for more advanced interlocking systems still in use today, albeit in electronic and digital forms. Saxby later partnered with Thomas Farmer to form Saxby & Farmer, a company that became renowned for producing railway signalling equipment.

In his obituary from the Institution of Mechanical Engineers it was noted: “Some of his early inventions were thought out while he was with the Brighton Railway Co. His first invention was an improved signalling lamp, which effected a considerable saving of the lamps then in use, but the principal one with which he was chiefly identified, and which brought him a considerable financial return, was his system of interlocking railway points and signals, for which he took out a patent in 1856. Prior to the adoption of his invention one of the most frequent causes of railway disasters was the changing of points while a train was passing over them.”

The obituary also noted that owing to the increasing demand by the railway companies for his railway points mechanism his works at Haywards Heath became too small for his requirements and he had to move to Kilburn.

Even in the 21st century, trains passing over facing points still face an element of danger. The most recent railway accident in the UK caused by points moving under a train occurred on 23rd February 2007 near



Double slip.

Grayrigg, Cumbria. In this incident, a Virgin Pendolino service derailed due to faulty points, resulting in one fatality and multiple injuries. The Rail Accident Investigation Branch (RAIB) identified the immediate cause as the condition of the stretcher bar arrangement at the points, which led to the loss of gauge separation of the point switch blades.

Sparking safety

The last great technologic and safety device created to support points operations was the invention of electric-powered points. African American inventor William B. Purvis (1838-1914) patented his W. B. Purvis's Electric Railway Switch in 1897. This became a significant advancement in the automation and safety of railway operations. This innovation was part of his broader contributions to transport and electrical engineering.

Purvis's invention aimed to improve the efficiency and safety of railway systems by automating the process of switching tracks. Traditional railway points required manual operation, which was labour-intensive and prone to human error. His electric switch sought to make the process faster, more reliable and safer. Electric railway points use electricity to control the movement of the switch mechanism. It integrated components to enable remote operation, which allowed conductors or operators to change tracks without being physically present at the switch. The invention was a precursor to modern automated systems in railroads, demonstrating early adoption of electrical technology in infrastructure.

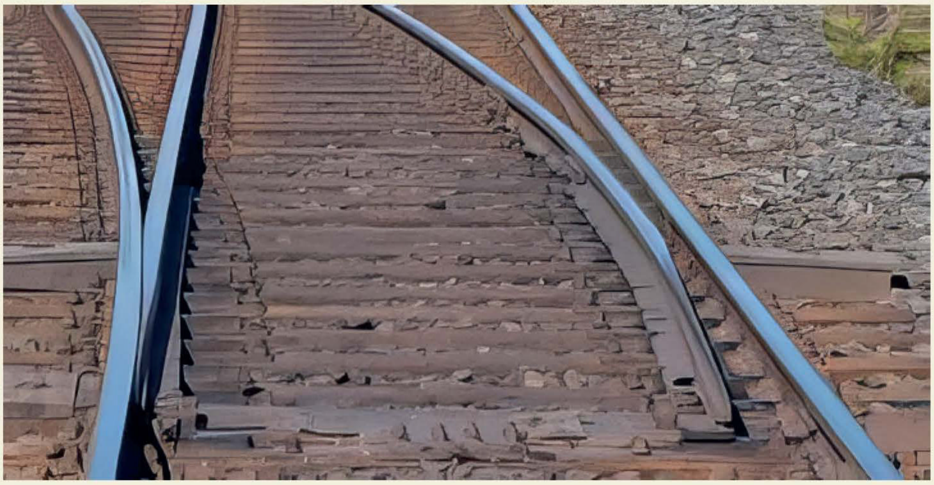
Catch points: safety first

A railway catch point is a safety device installed on railway tracks to derail unauthorised or runaway trains, preventing them from entering main lines or potentially hazardous areas. Typically consisting of a single or pair of movable switch rails, catch points guide a train off the tracks and on to a controlled derailment area, such as a gravel bed. They are strategically placed on sidings, steep gradients or branch lines. In modern systems, they may be automated and integrated into signal controls. While their use reduces the risk of major accidents, the design also ensures minimal damage to equipment and infrastructure during derailment.

The Stockton & Darlington Railway is considered by many as the first public railway to have used catch points from its opening in 1825. However, 75 years before the S&D opening, Carlisle Spedding (c1695-1755), an influential figure in the development of mining practices during the early eighteenth century in England, a mine owner and a skilled mining engineer and colliery manager, intended to install a catch point at his Whingill waggonway at Whitehaven, Cumbria. His line had a 1 in 11 gradient. According to M. J. T. Lewis, history does not record whether he actually did so: he probably did not as he was killed by a fire-damp explosion less than two months later.

Spedding wrote in a charming eighteenth century idiosyncratic manner: “To prevent great Mischiefs by the Running of Waggons, I intend at the Bottom of the Run to have a Branch laid and a switch Rail to be Shutt by an Old man to sit in a Cabbin and with an Iron Rod thro' a Conduit fixt to a small Leaver (when he Sees a Waggon got loose) he may Shut the Switch Rail and turn the Waggons into the Branch which Riseing till it Runs against a Battery of Earth and Turf will take no harm and will fal back again gently and I'll have another Switch Rail which shall Shutt of itself and turn the Waggon (as its coming back) into another Branch where it will rest till brot into the Main Way below the first mentioned Branch by which means if another Waggon or more shoud follow they will Escape breaking one another.”

Point blades.



Anatomy of a point

A switch is a simple assembly of parts that have not really changed since the middle of the nineteenth century. The main elements are fixed in place with the exception of the short length of rails which move to allow the divergence of the traffic.

Point blades or switch rails

The switch rails or points (point blades) are the movable rails which guide the wheels towards either the straight or the diverging track. They are tapered, except on stub switches in industrial sidings, which have square ends.

In some cases, the switch blades can be heat treated for improvement of their service life. There are different kinds of heat treatment processes such as edge hardening or complete hardening. British practice at the moment is seeing points rails being painted white to reflect growing summer temperatures. The cross-section of the switch blades also influences performance. New tangential blades perform better than old-style blades.

Crossing – frog or common crossing

The crossing is the component that enables passage of wheels on either route through the turnout. It can be assembled out of several appropriately cut and bent pieces of rail or can be a single casting of manganese steel. On lines with heavy use, the casting may be treated with explosive shock hardening to increase service life.

The term ‘frog’ in railroad terminology is the only real mysterious term. It refers to the part of a track structure where two rails intersect, allowing train wheels to move smoothly from one track to another. This term is said to have originated in the nineteenth century and is believed to have been inspired by the shape of the crossing piece, which resembles a crouching frog when viewed from above. The intersection's structure, with its ‘V’-shaped point and flaring sides, mirrors the legs and body of a frog.

Additionally, the name may have been influenced by the sound trains make when passing over these crossings, which can resemble the croaking sound of a frog, further cementing the association. While the exact origin of the term is not definitively documented, its use has persisted as a colourful and descriptive part of railway jargon.

Guard rail – check rail

A guard rail is a short piece of rail placed alongside the stock rail opposite the crossing. These ensure that the wheels follow the appropriate flangeway through the frog and that the train does not derail.

Switch motor

A switch motor or switch machine (point motor or point machine) is an electric, hydraulic or pneumatic mechanism that aligns the points with one of the possible routes. The motor is usually controlled remotely by the signalman in the UK. The switch motor also includes electrical contacts to detect that the switch has completely set and locked. If the switch fails to do this, the governing signal is kept at red. There is also usually some kind of manual handle for operating the switch in emergencies, such as power failures, or for maintenance purposes.

Switch stand – points lever

A points lever or ground frame is a lever and accompanying linkages to align the points of a switch by hand. They are often used in place of a switch motor on less frequently used switches. In some places, the lever may be some distance from the points, as part of a lever frame or ground frame. To prevent the tampering of switches by outside means, these switches are usually locked when not in use.

Facing point lock

A facing point lock (FPL), or point lock, is a device which, as the name implies, locks a set of points in position, as well as mechanically proving that they are in the correct position. The facing point part of the name refers to the fact that they prevent movement of the points during facing moves, where a train could potentially split the points (end up going down both tracks) if the points were to move underneath the train. During trailing moves, the wheels of a train will force the points into the correct position if they attempt to move, although this may cause considerable damage. This act is known as a "run through".

In the United Kingdom, FPLs were common from an early date, due to laws being passed which forced the provision of FPLs for any routes travelled by passenger trains – it was, and still is, illegal for a passenger train to make a facing move over points without them being locked, either by a point lock or being temporarily clamped in one position or another.

Joints

Joints are used where the moving points meet the fixed rails of the switch. They allow the points to hinge easily between their positions. Originally the movable switch blades were connected to the fixed closure rails with loose joints, but since steel is somewhat flexible it is possible to obviate this looseness by thinning a short section of the rail's bottom itself. This can be called a heelless switch.

Straight and curved switches

Switches were originally built with straight switch blades, which ended at the pointed end with a sharp angle. These switches cause a bump when the train traverses in the turnout direction. The switch blades could be made with a curved point which meets the stock rail at a tangent, causing less of a bump, but the disadvantage is that the metal at the point is thin and necessarily weak. A solution to these conflicting requirements was found in the 1920s on the German Reichsbahn. The first step was to have different rail profile for the stock rails and switch rails, with the switch rails being about 25mm (0.98in) less high and stockier in the middle.

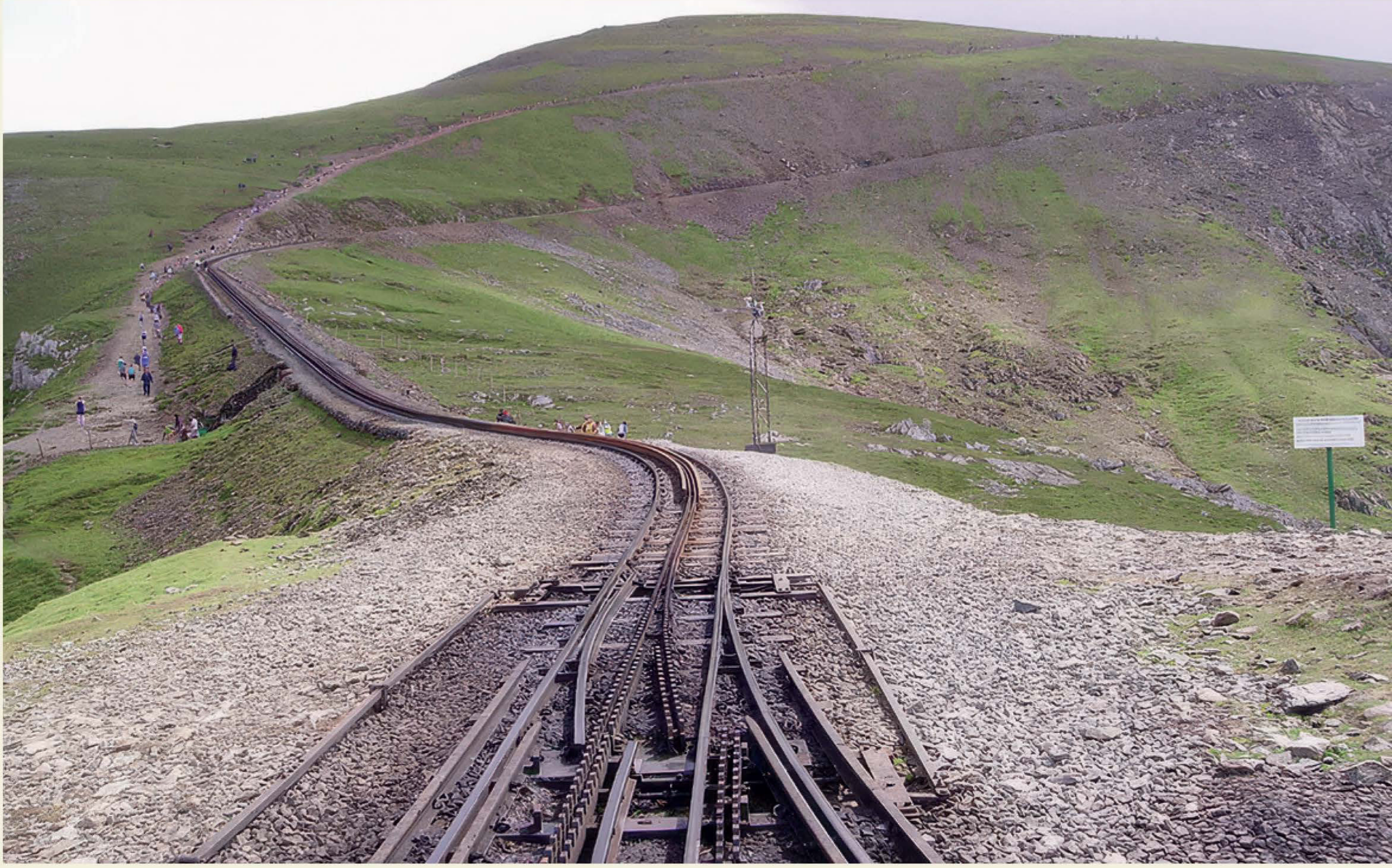
Slip switches – single and double

A double slip switch (double slip) is a narrow-angled diagonal flat crossing of two lines combined with four pairs of points in such a way as to allow vehicles to change from one straight track to the other, alternatively to going straight across. A train approaching the arrangement may leave by either of the two tracks on the opposite side of the crossing. To reach the third possible exit, the train must change tracks on the slip and then reverse. The arrangement gives the possibility of setting four routes, but because only one route can be traversed at a time, the four blades at each end of the crossing are often connected to move in unison, so the crossing can be worked by just two levers or point motors. This gives the same functionality of two points placed end to end. These compact, albeit complex, points usually are found only in locations where space is limited, such as station throats where a few main lines spread out to reach any of numerous platform tracks.

In North American English, the arrangement may also be called a double switch, or more colloquially, a puzzle switch. The Great Western Railway in the United Kingdom used the term double compound points and the switch is also known as a double compound in Victoria, Australia. In Italian, the term for a double switch is *deviatoio inglese,* which means English switch. Likewise, it is called *Engels(e) Wissel* in Dutch and, occasionally, *Engländer* (literally 'Englishman') in German.

Single slip

A single slip switch works on the same principle as a double slip, but provides for only one switching possibility. Trains approaching on one of the two crossing



Rack and pinion pointwork on the Snowdon Mountain Railway.

Par station catch points.

tracks can either continue over the crossing or switch tracks to the other line. However, trains from the other track can only continue over the crossing and cannot switch tracks. This is normally used to allow access to sidings and improve safety by avoiding having switch blades facing the usual direction of traffic. To reach the sidings from what would be a facing direction, trains must continue over the crossing, then reverse along the curved route (usually on to the other line of a double track) and can then move forward over the crossing into the siding.

Outside slip

An outside slip switch is similar to the double or single slip switches described above, except that the switch blades are outside the diamond instead of inside. An advantage over an inside slip switch is that trains can pass the slips with higher speeds. A disadvantage over an inside slip switch is that they are longer and need more space. An outside slip switch can be so long that its slips do not overlap at all, as in the example pictured. In such a case a single, outside slip switch is the same as two regular switches and a regular crossing. Double outside slip switches are only used in rare, specific cases.

Rack and pinion switches

The Snowdon Mountain Railway is a rack-and-pinion railway that ascends Snowdon, the highest peak in Wales. Traditional railway points are adapted to accommodate the rack system.

In rack railways, switches are designed to guide both the train's wheels and its cogwheel, which engages with the central rack rail. This ensures continuous traction and safety on steep inclines. The turnout mechanism involves movable sections of the rack rail that align with the desired track direction. When a train approaches a switch, these movable rack sections shift to connect seamlessly with the main rack rail, allowing the cogwheel to maintain engagement throughout the transition. This design was pioneered by the Strub system and is used in various rack railways worldwide.

The railway features passing loops at stations. At these points, trains travelling in opposite directions can pass each other. The switches at these loops are equipped with the necessary mechanisms to handle both the standard rails and the central rack rail, ensuring smooth and safe transitions for the trains.

Regular inspections and adjustments ensure that both the rail and rack components align correctly, providing uninterrupted service on the steep gradients of Snowdon.

Swing nose crossing

As of January 2025, the High Speed 2 (HS2) project contracted Voestalpine Turnout Technology UK Ltd. to design, manufacture and supply approximately 180 switches and crossings for Phase One and Phase 2a of the railway. The contract also includes the provision of around 77 rail expansion devices for tracks on viaducts and bridges, as well as approximately 70 lower speed switches and crossings for depots at Washwood Heath and Calvert.

It is important to note that the scope of the HS2 project has undergone changes over time. In 2023 the Government announced the cancellation of extensions beyond the West Midlands. Given this developments, the total number of points and crossings required for the entire HS2 network may be subject to change.

This is relevant because high speed lines are likely to use a swing nose crossing, a track component designed to allow trains to move seamlessly across intersecting tracks while minimising wear, noise and vibrations. It is an advanced and precision-engineered version of a standard crossing, often used in high-speed rail systems and heavily trafficked railways.

The defining characteristic of a swing nose crossing is its movable 'nose' or frog. Instead of being a fixed piece of track where the rails intersect, the nose is a movable section that aligns with the wheel flanges of the approaching train, creating a continuous running surface for the wheels.

This eliminates the gap typically present in fixed crossings, reducing the impact forces as wheels pass over. By eliminating the gap at the crossing, swing nose designs minimise wear and tear on both the wheels and the track. It also significantly reduces the noise and vibration caused by wheels striking a gap, providing smoother and quieter operations.

Swing nose crossings are equipped with hydraulic or mechanical systems that move the nose section into the correct position based on the train's direction. These systems are controlled remotely and synchronized with signalling systems to ensure safety and efficiency. They are particularly suitable for high speed rail systems because they maintain the continuous running surface required for stability and passenger comfort at high velocities without the speed limitations imposed by conventional crossings.

However, before it is thought the swing nose is a 21st century idea, a drawing illustrating Brandlng's incline at Brakehouse in Leeds from 1825 shows an early nineteenth century version in operation. Like a modern version, it can be seen that there are no check rails.

Three weak links of track

Railway points, those pivotal track switches, are often humorously referred to by railway engineers as one of the 'three weak links of track', alongside railway curves and rail joints. Yet their essential role in railway operations merits recognition. Without points, trains would be confined to repetitive, linear movements, rendering the vast, interconnected rail networks we rely on today inconceivable.

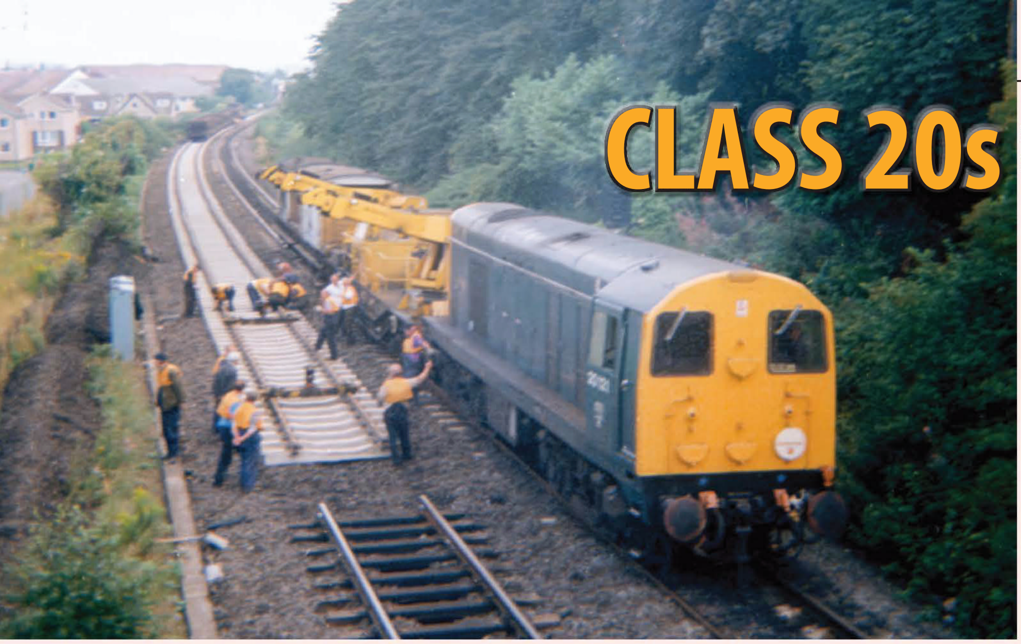
Since their inception in the eighteenth century, facilitating mine railways with timber and iron tracks, points have been a cornerstone of rail infrastructure. By the dawn of the Liverpool & Manchester Railway era, they had already proved indispensable, going on to guide locomotives through the nineteenth century's industrial surge.

Technological advancements have continually enhanced the efficiency and safety of points. The introduction of interlocking systems ensured the precise coordination of rail traffic, eliminating risks of collisions. The subsequent adoption of electric motors accelerated their operation, meeting the demands of an increasingly fast-paced world. More recently, innovations like swing nose crossings have further refined their functionality, ensuring smoother transitions and bolstering railway reliability.

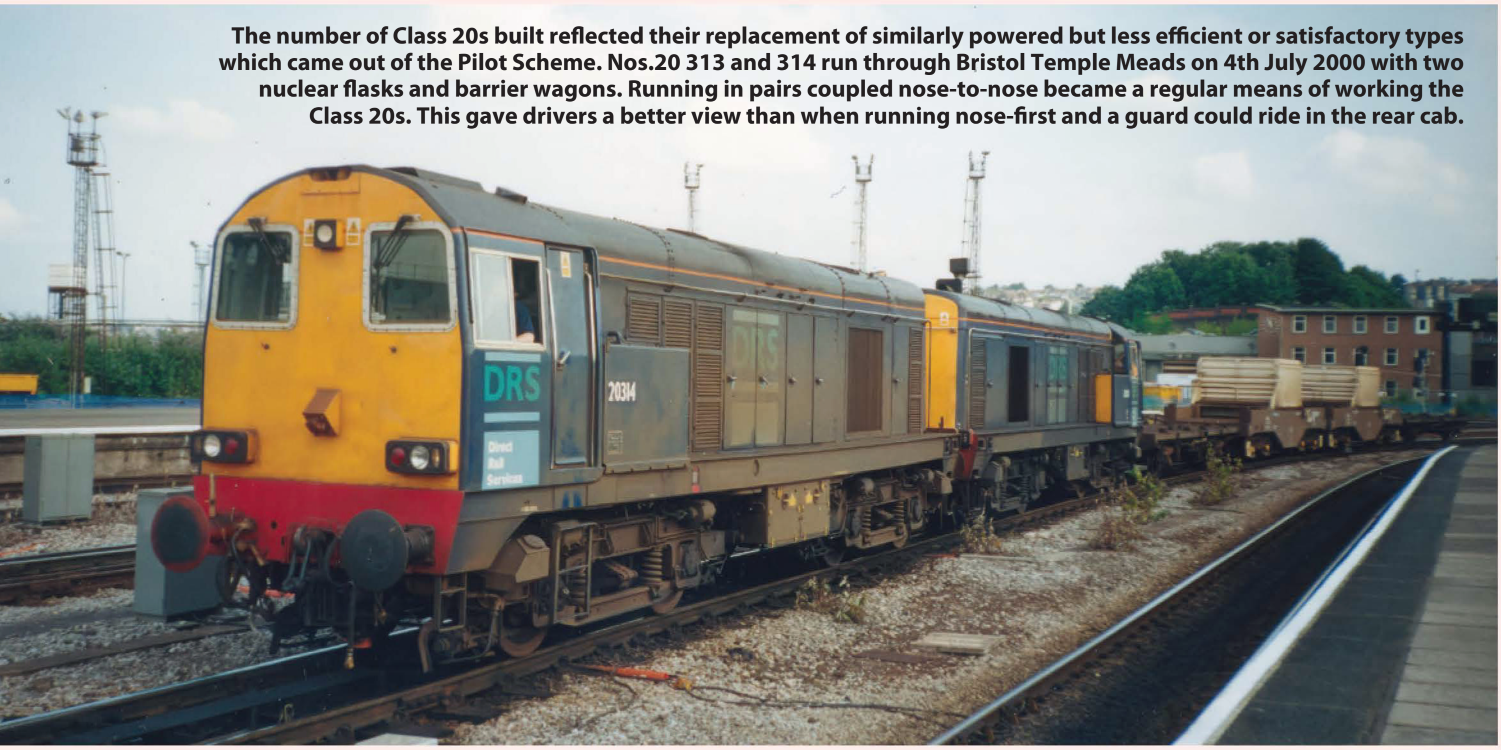
Today, railway points are more than mere components of the track. They embody centuries of engineering progress and innovation. Each seamless transition from one track to another is a testament to their enduring importance. Far from being a 'weak link', points have played a vital role in shaping modern railways, ensuring their adaptability and dynamic growth over more than two centuries.

CLASS 20s ON THE JOB

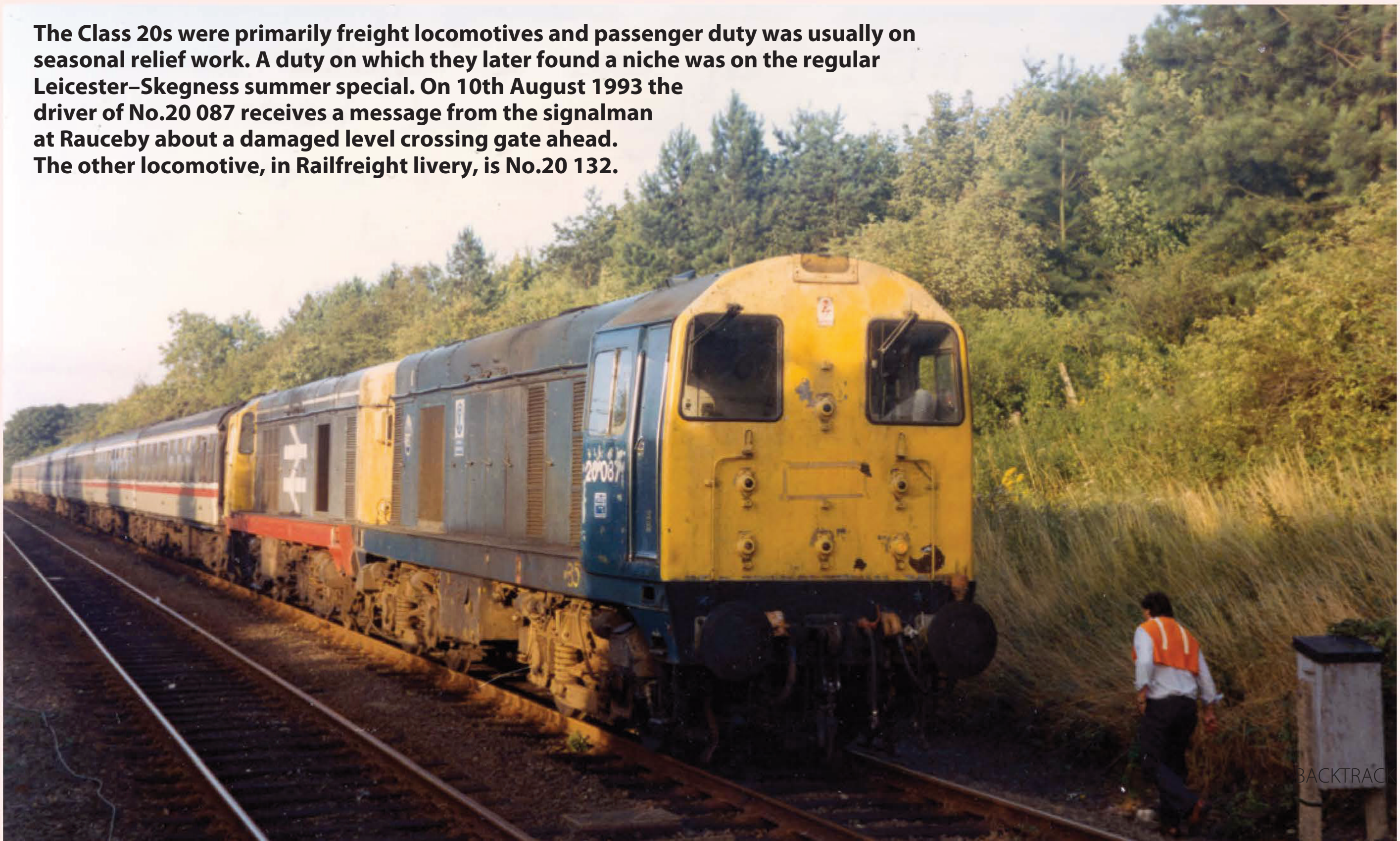
Photographed by **PAUL AITKEN**



LEFT: **The English Electric Type 1 – later Class 20 – Bo-Bo locomotives proved one of the most enduring designs to come out of the British Railways Pilot Scheme since they went into production in 1957, with examples of the 228 built up to 1968 lasting in service into the 2020s. Looking towards Crossmyloof station in Glasgow in August 1977, No.20 121 is hauling a track-laying machine and two brake vans during permanent way renewal operations. The mound of old ballast on the left, then one week old, has now been covered in grass for decades!**



The number of Class 20s built reflected their replacement of similarly powered but less efficient or satisfactory types which came out of the Pilot Scheme. Nos.20 313 and 314 run through Bristol Temple Meads on 4th July 2000 with two nuclear flasks and barrier wagons. Running in pairs coupled nose-to-nose became a regular means of working the Class 20s. This gave drivers a better view than when running nose-first and a guard could ride in the rear cab.



The Class 20s were primarily freight locomotives and passenger duty was usually on seasonal relief work. A duty on which they later found a niche was on the regular Leicester–Skegness summer special. On 10th August 1993 the driver of No.20 087 receives a message from the signalman at Rauceby about a damaged level crossing gate ahead. The other locomotive, in Railfreight livery, is No.20 132.

Readers' Forum

Letters intended for publication should ideally add extra detail to our articles (or offer corrections of course!) and not be too long, consistent with the detail they offer. As always, we are sorry that space and time prevent us from printing them all or sending personal replies. ED.

June issue back cover

A brain fog must have descended upon me when compiling last month's back cover caption. The bridge over the River Ouse in York in the centre of the photograph is not the Ouse Bridge but Lendal Bridge, which I know well enough having walked across it several times a week when I lived and worked in the city. Ouse Bridge is further along the river, off the picture to the right. **Ed.**

Railways and the Boer War – Part Two

Apologies to Berenice Baynham for misspelling her forename in the title of her article in the June issue. It was spotted just too late to get the correction made but we'll make sure it's right in Part Three. **Ed.**

Delight and despair at Dumfries

In your May issue Douglas McNaught presents a poignant picture of events at Dumfries in 1965,and it is not to detract from their sense of loss that I take issue with his claim that Dumfries station is a poor shadow of its former self. Many people have worked hard that it should not be so!

Sixty years later, on Sundays the car park in the former bay platforms now hosts a Farmers' Market. The new footbridge harmonises with its surroundings. Far from being 'relatively sparse', the remaining trains provide the most frequent service ever, two-hourly to Glasgow and hourly to Carlisle.

The award-winning gardens maintained by an enthusiastic group of volunteers are a delight to behold. The station buildings house a train crew depot, there is a busy cafe and last summer Railway Heritage Trust executive director Tim Hedley-Jones opened a new railway heritage centre created by ScotRail staff member Douglas Thomson which respectfully recalls what has been lost.

As mentioned, trains today from Glasgow to Carlisle via Dumfries are only two-hourly, but nevertheless this is the best ever frequency. Additional trains from Dumfries to Carlisle provide an hourly service on this section for most of the day, and start with the 04.57 from Dumfries and end with the 23.10 from Carlisle. With the advantage of a 'main line' route alignment most trains take just 37 minutes for the 33 mile journey, including stops at Annan and Gretna. Although Dumfries no longer has trains to anywhere beyond Carlisle this is hardly a sparse service.

John Yellowlees, by email

I enjoyed Douglas McNaught's article (May), having been able to make a journey from Stranraer to Carlisle on 24th August 1963 on the 13.40 Newcastle service, eleven coaches hauled by Standard Class 5 4-6-0 No.73062 piloted by Standard Class 4 2-6-4T No.80023 as far as Dumfries. This left 34 minutes late after awaiting the ferry from Larne but was only eight minutes late into Dumfries. I recorded speeds of up to 70mph between stops.

Retention of the Ayr to Stranraer line, together with the re-routeing of trains from Carlisle via Mauchline, enabled the railway to retain the then substantial boat train traffic from Glasgow, London and Newcastle. The longer Mauchline route was of little consequence to through passengers, especially those making overnight journeys. In any case, the overall journey time from Euston to Stranraer by the 'Northern Irishman' reduced from 9 hours 58 minutes in 1963 via the 'Port Road' to 9 hours 24 minutes in 1966 and 9 hours exactly in 1974 via Mauchline, aided by electrification from Euston to Crewe then Carlisle.

The local traffic between Dumfries and Stranraer was lost, but Andrew Swan's book referenced in the article mentions a private survey showing that the two daily trains either way averaged 30 passengers between them! This is unsurprising given that the largest settlements served, Castle Douglas and Newton Stewart, bothh had about 4,000 inhabitants, and Gatehouse-of-Fleet and Wigtown, the next largest in the area but both several miles from the line, only around 1,000. A wonderful railway was lost but sadly this was inevitable. Incidentally, the Ayr to Stranraer line, overlooked by those rushing to the Highlands, rates highly in my view among Scotland's scenic railways.

Stephen G. Abbot, Skipton

The decade of stage mail coach 'piggy backing'

At about the same time that Tom Nicholls' article appeared in the April 2025 edition of *Backtrack* I had come across this report transcribed from the *Daily News* of 9th May 1846, which may be of interest to Tom and to yourself, both for the use of the telegraph and for the information regarding the use of piggy-backing for a stagecoach on the London & South Western Railway.

"WANDSWORTH - USEFULNESS OF THE ELECTRIC TELEGRAPH.– Yesterday, William Rumbelow, a man about forty years of age, who was dressed as a civilian, but is pay-serjeant of the 3rd Buffs, and Anne, his wife, were charged with stealing a 10l. Bank of England note, two 5l. ditto, and about 2l. 10s. in silver, the property of Captain Chamberlain, also of the 3rd Buffs.- Mr. Dolby [*sic* - was Dalby], the superintendent of the South Western Railway police, stated that at twelve o'clock on Thursday he received information by the electric telegraph that the prisoner, a pay-serjeant in the 3rd Buffs, quartered at Gosport, had absconded, taking with him a considerable sum of money, and that he had started from Portsmouth by the *Rocket* coach, which runs only as far as Guildford, from whence it is conveyed to London by the railway. Upon the arrival of the coach by the train at half past four, witness went to it, and found the prisoner and his wife seated inside. Upon being asked his name, he said it was Brown. Witness then asked him if he had not got a boil at the back of his neck, and he admitted he had; and his personal appearance corresponding with the description sent up, witness gave him and his wife into custody. The prisoners were then taken to his (the superintendent's) office and searched, when upon the male prisoner was found a 10l. note, two 5l. notes, and between 2l. and 3l. in cash. Witness subsequently caused a communication to be made by the electric telegraph that Rumbelow had been apprehended, and requesting Captain Chamberlain to come up by the mail train that morning, which he had done. The superintendent added, that he held a warrant from the War-office to apprehend the male prisoner as a deserter. It appeared he had changed his regimentals for coloured clothes at a public house in Portsmouth. The male prisoner said he had no intention of absconding, and he should have returned that day; and with respect to the money, he could make that all straight. Mr. Paynter ordered the constable in charge of the prisoners to convey them without delay to Gosport, where they might undergo examination before the local authorities. The male prisoner enlisted in 1826; he had been eighteen years a serjeant, and for the last nine years pay-serjeant for his company. His character had been considered irreproachable."

David Elwyn, by email

The rise and fall of Speedlink

Thank you for the fascinating and well-informed articles by M. G. Sadler on the rise and fall of Speedlink. I was a TOPS clerk at Warrington Arpley in the 1970s and witnessed some of the inefficiencies of the wagonload system. For example, a wagon arriving at Arpley from Scotland destined Warrington Central freight terminal would initially be shunted by Target-69, the Extension pilot, over to the Old Side where Target-68 would shunt it to 15-road. In due course Target-70 would trip it up to Walton Old Junction where Target-71, the WOJ Pilot, would shunt it into the road for Central. Finally Target-75, with a brake van at both ends, would convey it via Skelton Junction (run-round) to Warrington Central. So four Class-08 locomotivess with associated drivers and shunters and one Class 25 locomotive with driver and guard just to get a wagon from Arpley to Central, a distance of no more than a mile!

The economics were clearly hopeless when a road lorry could make the journey in one shift, helped by the fact that the driver would encounter not one single toll-booth on the journey. It was the expense of shunting and tripping that did it for Speedlink, rather than the trunk hauls. Let us hope that the nascent domestic intermodal network can go some way to replacing Speedlink in due course.

Mark Doran, Oxford

No.9017

I enjoyed Andrew Wilson's excellent article on No.9017. Oliver Veltom was one of the last former GWR men who kept things intact. It was his railway and he knew virtually everyone in the district, was well liked and remembered with pride. There are a number of people missing in Andrew Wilson's excellent article on No.9017. It was the BR WR District Operating Superintendent at Oswestry, Oliver Veltom, who helped facilitate No.9017's stay in Oswestry Works with the co-operation of Works Manager Dan Goodman in order to enable the preservationists to have the time to raise the money to buy it. It was said Dan Goodman kept No.9017 out of the sight of higher authority by putting it in the far end of the erecting shops. Oliver Veltom saved the Welshpool & Llanfair Railway from being lifted and ensured its two locomotives were kept in Oswestry Works until 1962 again with the help of the staff ,until the preservationists had the time to raise the money for them. John Wilkins, railway benefactor, bought No.822 for the preservationists. Regarding the Vale of Rheidol, it was known to the BR staff as 'Veltom's own Railway', such was the efforts Oliver made to save it from closure.in the mid-1950s. Another lesser known railwayman was Edward Campbell Thomas, station master at Machynlleth, who saved the two Corris Railway locomotives from 1948 to 1951 from being scrapped at a time of a national scrap drive. Like Oliver Veltom, his name is missing in a number of historical studies. Writer George Behrend summed it up. Oliver Veltom and Edward Campbell Thomas left no records of what they did for secrecy was of the greatest importance; when you are trying to save five locomotives from being scrapped and prevent a railway being lifted you do not leave any records about them. Sadly, they have not always been given the credit for what they did. I hope this helps to put the record straight.

Chris Magner, by email

Geoffrey Norman Webb

In his appreciative piece on Geoffrey Webb (*BT* May) Peter Butler wrote: "Where Geofrey came into his own was when people came to him... to ask him to check something they were about to publish. Among these were ... many others". I was among those 'many others'. I had also got to know Geoffrey through the Locomotive Club of Great Britain at Bedford so when I began writing my East Midlands volume for the David & Charles *Regional Railway Histories* series, he readily agreed to look at each chapter as I produced it. I still have his meticulous and invaluable notes.

Three people were very helpful in this period in shaping my railways interest, all featuring in this issue of *Backtrack*. First is Geoffrey himself. Again as Peter says, "he opened my eyes to the many aspects of railways I might have dismissed as being uninteresting". And Peter illustrated that accordingly with buildings, architectural detail and signage. Me likewise. Although the locomotive fraternity was less keen, Geoffrey's slide presentations at Bedford were always popular and full of interest especially when less obvious items came up, eg platform seats bearing the pre-grouping logo in the cast ironwork. Several times I was asked to give the vote of thanks and his approach has since stood me in good stead in my work as a judge and adjudicator for the National Railway Heritage Awards, which I am still honoured to be able to do. Then Ian Wright, whose photograph of the Higham Ferrers branch train leaving Wellingborough graces Peter's other feature 'Travels with My Aunt' (p316), taught me how to crop pictures. We both taught at Wellingborough High School, he as Head of Art, I as Head of History, and we would get together at break to discuss progress on our respective books (he was working on *Canals in Wales* for Bradford Barton). Finally Peter himself, who readily welcomed me into his home when I first came to Wellingborough and began work on East Midlands and provided invaluable source material and encouragement.

Robin Leleux, Ilkey

Editorial – June

Your comments in the June *BT* regarding the disappearance of the W. H. Smith name from the High Street were, of course, matters for the Department of Administrative Affairs, but it is perhaps worth reflecting that the situation represents the reversal of a much earlier episode in railway history. Towards the end of 1905, the Great Western Railway and London & North Western Railway gave notice that they would not renew Smith's bookstall contracts with them and it was this that caused the retailer to start to open conventional shops in the first place. The story is told in a book, *Seen from the Railway Platform* (1919), written by former bookstall superintendent William Vincent.

Matthew Searle, Kidlington

Halwill Junction

As perhaps as the only *Backtrack* reader who was born at Halwill Junction, can I add a couple of things to the station's appearance in 'Little Things Mean a Lot' (June issue)? True, for most of a typical day, Halwill Junction was very quiet, but about six times a day, trains converged on the junction from at least three of the four routes. There would be splitting of trains or attachment of coaches and a hectic twenty minutes for the signalman. Incidentally my father's brother-in-law Fred Cooke, was at Halwill Junction box in the 1930s and promotion for him to higher grade took him to Exeter Central A, one of only about four or five boxes on the Southern in Devon ranked above Halwill. The station buildings do look quite modest and were identical to those at Ashbury and Dunsland Cross, the other stations on the original Okehampton to Holsworthy line. However, when the North Cornwall line opened in 1886, the LSWR built the Halwill station master a new house on the other side of the level crossing, and his former accommodation became additional offices for the station. That house, unlike the rest of the station, still survives. By the way, were there many other railway stations in Britain and Ireland that could boast a Cottage Hospital within a hundred or so metres?

My postal address also commemorates Halwill Junction in a rather roundabout way. The station was exactly on the parish boundary between Halwill and Beaworthy but the Post Office premises were on the Beaworthy side and as postbags for quite a large area of north west Devon were put off the train here, Beaworthy became the name for the postal town (and is now post code EX21)

John Bradbeer, Beaworthy, Devon

BookReviews

|★★★★★ Excellent|★★★★ Very Good|★★★ Good|★★ Fair|★ Poor|

Railways in Victorian London

By David Brandon. Published by Pen & Sword, March 2025. Hardback. 216 pages, 60 monochrome illustrations. ISBN 978-1-39905-112-5. Published price £25, full details from: www.pen-and-sword.co.uk

'The Great Wen', London was called disparagingly by William Cobbett in the 1820s when it was already well over a thousand years old. This was the Metropolis which first encountered railways a few years later and this wide-ranging book recounts how London accommodated the new mode, and the radical changes it brought in its wake. We find that it is wrong to have too rosy a view of the welcome the pioneers encountered, for those who influenced public policy desired the convenience, but deplored the intrusion which made it possible. The banishment of surface railways from Central London in 1846 is a familiar topic, creating the fringe of terminal stations (and their supporting facilities, such as engine sheds and goods yards, still further out). Even in their truncated form the main line railways were no less disruptive: Charles Dickens, quoted here, memorably describes the cataclysm of railway construction through Camden Town. We can appreciate such reactions better now, with popular revolts against the new high speed lines bringing back into popular discourse the price paid to achieve desirable ends.

The Metropolitan Railway was an early attempt to avoid objectors, creating a subterranean link between Paddington and the City, but at the price of massive disruption and expense. So costly and chaotic was construction that it took twenty years to complete what we know as the Inner Circle. When technology allowed, the tube railways followed. In a contrary sense the underground lines soon created suburban sprawl and, as Mr Brandon points out, the main line railways even provided the opportunity to live by the sea and travel to work. In Central London the urban fabric hid railways, but further out the trains created a new fabric of their own, which to a great extent survives today.

From a framework of the development of railways we move to unexpected consequences, including for instance the growth of competitive sport which required cheap and reliable mass transport. Tourism, nowadays a staple of London's economy, was another innovation, following on from the Great Exhibition to which the railways brought throngs of provincial visitors, the first such popular occasion. Other themes explored are the birth of grand hotels, from beginnings at Euston and Paddington, and also the change to the face of London arising from the many new river bridges which a century and a half later still serve successive generations of travellers. Station bookstalls were another novelty which is still with us today, although the days of dining rooms and Pullman cars are long gone.

The narrative is well supported by a wide selection of illustrations, including examples of the menacing works of Gustave Doré revealing the underside of the brave new railway world, and the book is a valuable and well-presented introduction to a noteworthy subject.

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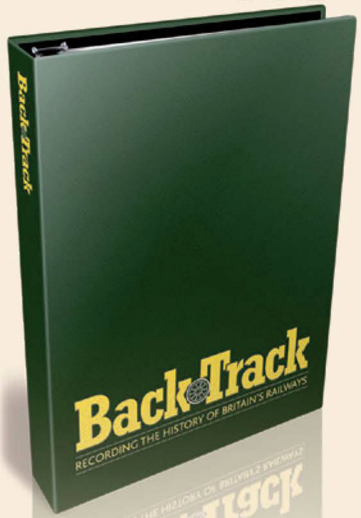

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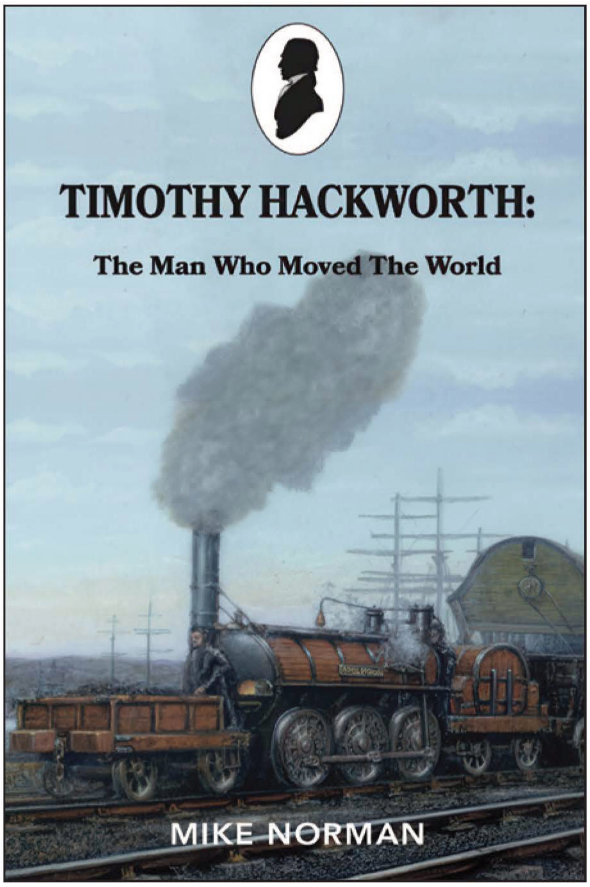

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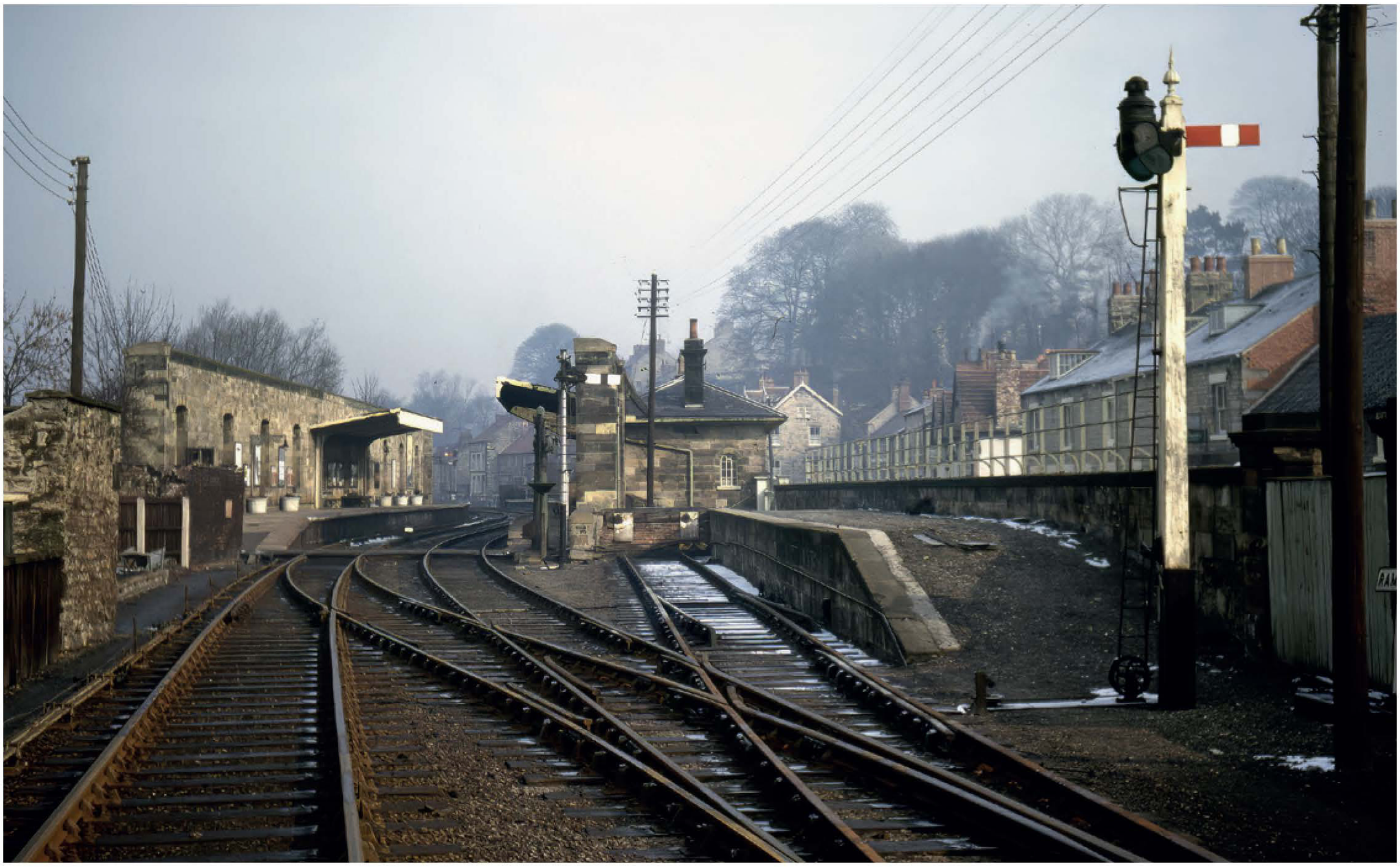

THE MORNING AFTER AT PICKERING

Pickering station, on the Whitby–Malton line, early on the morning of 7th March 1965. And it is the morning after, for on the previous day the last trains had run and railway from Malton as far as the junction with the Esk Valley branch at Grosmont had closed. The rails have not yet rusted over but of passengers there will be no more. A local goods service between Malton and Pickering lingered on until the following July – but happily it was not to be the end after all, as since 1973 the line from Pickering to Grosmont has thrived as the heritage North Yorkshire Moors Railway. Pickering's overall roof had been replaced by these utilitarian canopies in 1952 but a new trainshed, replicating the original, was completed in 2011. Note the unusual double-faced North Eastern Railway shunting signal for the loading dock.
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